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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF RESEARCH AND DEVELOPMENT  
RISK REDUCTION ENGINEERING LABORATORY

CINCINNATI, OHIO 45268

REPLY TO:  
Technical Support Branch  
U.S. EPA  
2890 Woodbridge Avenue  
Building # 10 (MS-104)  
Edison, New Jersey 08837-3679

DATE: March 26, 1991

SUBJECT: Transmittal of Marketing Studies Report (for Lead-Acid Battery  
Residuals at Gould Site, Portland, OR)

FROM: Michael D. Royer *Michael D. Royer*  
START Leader, Technical Support Branch, TSB  
Superfund Technology Demonstration Division

TO: Anita Boseman  
Remedial Project Manager (5HS-11), Region V

Per our discussion today, attached are copies of a two-part report:

1. "Market Studies Report," February 1990 by Canonic Environmental Services, Inc., sponsored by NL Industries, Inc. for the Gould, Inc. Site in Portland, OR
2. "Telephone Records for Marketing Studies Report NL Industries, Inc."

I am providing copies of the report because I think that you and other RPMs/OSCs in Region V with lead battery recycling sites will find it useful both for the information and contacts it contains, as well as a source of ideas for performing market studies tailored to sites in the Region V area.

This report is the best attempt that I have seen to investigate and document the marketability of selected products (high and low concentration lead fines, hard rubber, and plastic) recoverable from a lead battery recycling site. The topic of metallic lead concentration is briefly addressed on page 17.

The marketing study is based on the expected products from a proprietary separation process developed by Canonic Environmental Services, Inc., funded by NL Industries, for the Gould Site wastes. Based on the Market Studies Report, the use of hard rubber as a fuel supplement appears to have promise for two types of users -- cement kilns or power plants. A number of promising responses were also received from several smelters regarding potential acceptance of high concentration lead fines. Plastic, which seems to be assumed by some to be readily recyclable, would require additional cleaning before it would be acceptable to the recyclers who examined the initial cleaned plastic product from the Gould Site.

Project 88-099-07  
February 1990

**Canonie**Environmental

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# Marketing Studies Report

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Gould, Inc.  
Cerca Site  
Multnomah County  
Portland, Oregon

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Submitted to:

NL Industries, Inc.  
Hightstown, New Jersey

# Marketing Studies Report

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2-1	88-099-B142	Locations of Markets for Recycle Products



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A	Lead Fines Marketing Data
B	Ebonite Marketing Data
C	Plastic Marketing Data
D	Shipping Regulations

MARKETING STUDIES REPORT  
NL INDUSTRIES, INC.

1.0 INTRODUCTION

This report fulfills the requirements of the Test Marketing Study (Task 7) of the Pre-Design Studies for the Gould Site. The scope of the study and deliverables are described in Section 2.7 of the Pre-Design Studies Work Plan.

Canonie Environmental Services Corp. (Canonie) has developed a process to treat the buried wastes at the Gould site. The process produces lead fines, ebonite (hard rubber), plastic, and metallic lead products, which can be recycled into existing manufacturing or recycling operations. In this study, Canonie has identified the range of alternative markets for the products from the recycling treatment process and obtained written expressions of interest (or noninterest) from potential end-users of these products.

The details presented in this report include:

1. Product specifications and safety sheets;
2. Lists of potential markets;
3. Written responses to inquiries; and
4. Review and interpretation of regulations affecting the off-site shipment of hazardous waste.

Canonie has determined, as far as possible, the cost impact of recycling on the site remediation. These data are preliminary because the market and price for recyclable materials may change at the time of remediation. Bulk materials will be manufactured during the field demonstration test, which will be conducted during the spring of 1990. These materials will be stored on the Gould site and can be used for acceptance testing by recycling companies or other end-users of the products.

## 2.0 SUMMARY

The marketing study has resulted in definition of the most likely markets for the products from the battery waste treatment process. A short list of the more promising contacts is presented in Table 2.1. The location of the markets relative to the Gould site is presented on Figure 2-1.

A wide range of companies was contacted by telephone, and samples of products from the process were sent to selected end-users for evaluation. The findings presented in this report are based on the responses received to these inquiries.

The markets suggested for the lead fines materials are primary and secondary lead smelters. These facilities can process the fines for recovery of metallic lead. It is likely that disposal of this material will result in a cost to the project amounting to about \$130 per ton or \$2.3 million total cost, if the material is shipped to the nearest smelter in Trail, British Columbia. This cost might be reduced to \$1.4 million by process improvement anticipated in the treatment plant.

The markets explored for ebonite included concrete aggregate, asphalt and road construction materials, rubber filler, and fuel. The most likely market for this material is as a fuel supplement for local consumption in power plants or cement manufacturing facilities. Initial contacts indicate that the material might be accepted without payment or charge. Transportation would likely be paid by the project and could amount to \$21.25 per ton, or \$956,000 for the total project.

The plastic product can likely be sold locally for up to \$.15 per pound. The product may require further size reduction and cleaning prior to marketing. This can be accomplished in the treatment equipment used for the site remediation. The price of plastic depends on the polypropylene content and existing market conditions. If this material can be marketed locally, the amount of credit to the project could be between \$600,000 and \$900,000.

If a metallic lead concentrate is produced, it can be jigged with a portable system to produce about 120 tons of metallic lead concentrate for off-site disposal. At the current price for lead metal (\$.32 per pound), this material might result in a credit of \$21,800 to the project, including transportation.

Adding the products' credits and debits, shown in Table 2.2, indicates a net cost to the project of between \$1.3 and \$2.7 million for the recycle of products from the treatment process. This amount will reduce to \$300,000 to \$1.7 million if the cleaned ebonite is backfilled on-site. Further reductions might be achieved by seeking local markets to reduce transportation costs.

The products produced from the treatment process, including those which do not pass the Extraction Procedure Toxicity Characteristics (EP Tox) test for lead, will not require manifesting as hazardous waste if they are being shipped to a licensed facility for reprocessing. Shipments will be required to meet Department of Transportation regulations.

### 3.0 PRODUCT CHARACTERISTICS AND QUANTITIES

The waste materials at the Gould site consist principally of battery casings, furnace products, and trash. A treatment process for these materials was developed in a bench and pilot test program.

Four products are made in the process: lead oxide/lead sulfate fines, clean ebonite, clean plastic, and a metallic lead concentrate. The remaining materials are furnace products (matte and slag) and trash, which will be stabilized for on-site disposal. Waste products produced by the process during the treatment operations are blended with the other wastes for on-site disposal.

The lead fines consist of lead sulfate/lead oxide slimes, which are separated from the waste and filtered to form a cake. Specifications for the material are presented in Table 3.1.

The clean ebonite consists of washed broken battery casings. The product is free of dust and dirt and has a minimum size of 0.08 inch and a maximum size of 1.0 inch. Specifications are provided in Table 3.2.

The clean plastic consists of dry, dirt-free granular chips with the same size range as the ebonite. Specifications are provided in Table 3.3.

The metallic lead product contains between 20 to 32 percent lead with the remaining material being dirt and trash. A bulk sample of this material was not prepared separately for market studies since it can be marketed with the lead fines.

Based on preliminary material balance calculations, processing will yield the following amount of potentially recyclable materials:

Lead fines	18,000 tons
Clean ebonite	45,000 tons
Clean plastic	3,000 tons
Metallic lead concentrate	350 tons

It is anticipated that this amount of material will be generated over a period of 18 months during site remediation.

## 4.0 LEAD FINES

Lead fines are separated from the waste in the treatment process and are obtained as a sludge by screening. The sludge is filtered to produce a cake material that can be drummed or stored in a roll-up box for transportation to the end-user.

### 4.1 Recycling Options

Lead fines can be recycled by primary and secondary lead smelters. A primary smelter recovers lead from its ores. These plants treat large tonnages of material and, possibly, could accept the small amount of fines produced on the Gould site without affecting current operations.

A secondary smelter processes batteries, metal scrap, and other recycled materials. These operations process smaller tonnages than a primary lead smelter but are more inclined to accept recycled waste since this is their primary source of revenue.

#### 4.1.1 Primary Lead Smelters

There are four operating primary smelters in the United States. These are the ASARCO smelters in Glover, Missouri; East Helena, Montana; and Omaha, Nebraska; and the DOE-RUN CO. smelter in Buick, Missouri. COMINCO operates a primary lead smelter in Trail, British Columbia, Canada, which is closest to the Portland, Oregon site.

##### 4.1.1.1 Results of Initial Contacts

All three companies were contacted to determine if smelting facilities could be used to recycle the lead fines. Written communications are presented in Appendix A. Telephone logs are presented under separate cover in Attachment A. Two of the three companies (ASARCO and COMINCO) expressed an interest in the product. Samples were shipped to these companies for evaluation.

ASARCO stated in a letter that the lead fines material would be amenable to the smelting process at the ASARCO facilities. A request for more detailed characterization information was received from the Salt Lake City office and is presented in Appendix A. Depending on workload, the material may have to be shipped to the Missouri smelter, rather than the Montana smelter, which is closer.

The COMINCO smelter has also indicated by telephone that the material may be acceptable for processing. This facility is 350 miles from the Gould site and represents the best location for recycle. As presented in the telephone log, COMINCO estimated the processing cost at \$250 per ton with a contained lead credit of \$.32 per pound at current lead prices. This amounts to a net charge of \$94.00 per ton of fines at 27 percent lead content and 90 percent extraction efficiency.

The DOE-RUN smelter indicated that the material was not of interest at the present time but could be recycled in the secondary lead smelter, which will be operational in 1992. As indicated in the telephone records, net disposal cost was estimated at \$50 to \$100 per ton plus freight.

#### 4.1.2 Secondary Lead Smelters

A list of secondary smelters was compiled from three sources. Bill Woodbury of the Bureau of Mines (USBM) in Washington, D.C. supplied the names of 52 companies and annual production figures from the larger firms for the years 1987 and 1988. A second list was furnished by Judy King of the Washington, D.C. law firm of Fox, Weinberg & Bennett. This list contains the names of 30 companies that operate secondary lead smelters. The third source was the Buyer's Guide of the Independent Battery Manufacturers Association (Reference 1) which lists 18 smelters in the United States. The names of these companies are presented in Table A-1 in Appendix A.

##### 4.1.2.1 Results of Initial Contacts

All the companies on the list were contacted by telephone and asked whether they would accept lead sludge containing 20 to 40 percent lead at an annual



rate of 5,000 tons for four years beginning in 1991. Of the 61 companies contacted by telephone, 17 gave positive responses. The results of the telephone marketing survey for lead fines are presented in Table A-2 in Appendix A.

There were different reasons why some of the companies showed no interest. Some companies smelt metals and alloys other than lead. Other companies were only interested in smelting metallic lead scrap. One company will not take lead sludge because of air pollution concerns. Small firms stated that they would have a problem taking 5,000 tons per year because of limited capacity. Perhaps the most noteworthy reason for lack of interest pertains to the low lead content of the sludge. The lead content of the Gould site sludges of 20 to 40 percent is currently uneconomical. Several companies said they would take sludges with a minimum lead content of 60 to 70 percent.

A 5- to 10-pound portion of the composite lead fines sample was sent to the 13 secondary smelters identified in Table A-3 in Appendix A. To date, responses have been received from 10 companies. There were five positive and five negative responses. The companies who declined said that the material cannot be used in their process. Copies of the written responses are presented in Appendix A. Exide Corporation requires the processing of 10 to 15 drums of the material through the furnace in order to develop price information.

#### 4.2 Off-Site Recycling Cost/Revenue

It is likely that if the lead content of the fines remains in the 20 to 30 percent range, off-site recycling will result in a net cost to the project. This cost will be made up of transportation and "processing" fees. Processing fees will be determined by processing a large bulk sample of material. On a preliminary basis, the cost of recycling the lead fines is estimated at \$130 per ton, if the material is processed at the COMINCO primary lead smelter in Trail, British Columbia, Canada. The recycle will result in an estimated cost of about \$2.3 million to the project, including transportation, processing, and lead credits.

It is likely that the treatment process will be able to make a lead concentrate that contains about 40 percent lead, and a low-grade concentrate that contains about 16 to 18 percent lead. If this occurs, the recycle cost of lead fines could be reduced to about \$1.4 million, a net savings of \$900,000. This assumes that the low-grade concentrate (6,000 tons) can be landfilled at a Resource Conservation and Recovery Act (RCRA) site at \$130 per ton, and the high-grade concentrate (12,000 tons) can be recycled at \$55 per ton.

## 5.0 CLEANED EBONITE

The cleaned ebonite is discharged from the process as dry granular chips with a top size of 1.5 inches. This material can be stored in drums or shipped from the site in roll-up boxes to the end-user.

### 5.1 Recycling Options

While lead and lead compounds can be recycled to make new batteries; the battery casings cannot. Modern battering casings are made from plastic. The ebonite used in old battery casings is no longer used as a battery component.

Alternatives considered for recycling ebonite included additives in concrete and asphalt, use as a fuel, and sale to recycling companies for use as a filler in rubber or similar products.

#### 5.1.1 Concrete Aggregate

It was thought that cleaned ebonite fragments might be used as aggregate in concrete to substitute for crushed stone, crushed gravel, or natural gravel. There is a large market for aggregate in Oregon. According to Mr. Dick Angstrom, Director of the Oregon Concrete and Aggregate Association, the annual consumption in three counties of the Portland area amounts to 15 to 20 millions tons per year.

In order for ebonite to be useful as aggregate in concrete, it must meet several American Society for Testing and Materials (ASTM) standard specifications designated in C33-86. A detailed list of test specifications is presented in Appendix B. In the abrasion resistance test, (ASTM C131-81) the sized aggregate fragments are subjected to ball milling for a specified time period and the amount of fines produced by this treatment is measured. A test performed on ebonite from the Gould site showed that the abrasion amounted to 6.2 percent, compared to the maximum allowable abrasion limit of 50 percent. The ebonite passes the abrasion resistance test.

Ebonite contains more than 50 percent coal dust in addition to minor amounts of oil and other organic substances. Coal represents a deleterious substance in concrete and the allowable limit for all classes of concrete is 1 percent or less of coal.

Ebonite has a specific gravity (sp. gr.) of 1.4 grams per cubic centimeter. ASTM C33 specifies that the amount of low density material (less than 2.4 sp. gr.) shall not exceed 3 to 10 percent in those applications where structural strength is essential.

Lightweight concrete, according to ASTM C330, must have a loss on ignition of less than 5 percent, compressive strength of greater than 2,500 pounds per square inch (psi), and splitting tensile strength of greater than 290 psi. While the physical strength of an ebonite-based concrete has not been tested, it is well known that ebonite will burn and the resulting weight loss on ignition would, therefore, be in excess of 5 percent.

In summary, the ebonite product produced from the treatment process has a number of physical properties which make it unsuitable as an aggregate additive in normal or lightweight concrete. Investigations for this use of the ebonite were terminated. Written communications are presented in Appendix B. Telephone records are presented in Attachment A.

#### 5.1.2 Asphalt Additive

Aggregates for asphalt mixes must pass the ASTM standard tests listed in Appendix B.

Bob Campbell of the Asphalt Institute in Tempe, Arizona indicated that ebonite had not been used as an asphalt additive and suggested a heating test which might quickly evaluate its potential use in this area. The test involved heating the material to about 300 degrees Fahrenheit to investigate its stability. Results are presented in Appendix B. The ebonite appeared to be physically stable, but emitted a noxious odor that smells like burning plastic.

In discussing the option of using ebonite as highway construction material with engineers of the Colorado Department of Highways, it was learned that lead-based paint is no longer being used for marking highways because of its toxicity. Since cleaned ebonite contains traces of lead, Mr. Frank Abel, Staff Materials Engineer of the Department of Highways, stated in a letter that he would not recommend its use.

Work on the use of ebonite as an asphalt additive was terminated after these preliminary contacts. Written communications on the subject are presented in Appendix B; telephone logs are presented in Attachment A.

### 5.1.3 Industrial Fuel Supplement

Because of its high heating value in the 12,000 to 13,000 British Thermal Units per pound range, ebonite could be used as a supplemental fuel by industrial consumers. Potential problems with this use are that the ebonite contains approximately 3 percent sulfur and the residual lead content after cleaning is between 200 and 500 parts per million. Upon combustion, part of the sulfur and lead may enter the flue gas stream. If standard flue gas cleaning equipment is used, the lead would likely be trapped in the baghouse, and the sulfur would be removed in the wet scrubber. These potential problems will be minimized if the ebonite is used as a fuel supplement and not burned directly. Contacts were made with a local power plant and cement manufacturer to determine the possibility of recycling the ebonite as a fuel supplement.

#### 5.1.3.1 Power Plant Fuel

The Boardman plant is located 170 miles from Portland and is owned by Portland General Electric (PGE). This plant has a generating capacity of 530 MW (megawatts) but is currently not operating full time. When in operation, the plant consumes 7,000 tons of coal per day. The annual production of ebonite at the Gould site amounts to 10,000 tons, which is less than two days' fuel supply.

If the company remediating the site is willing to secure the necessary permits, and the state of Oregon requests that the ebonite be burned at the Boardman plant, PGE would accept the material. Sulfur is not expected to be a problem since the material can be blended with existing supplies of low sulfur coal to meet the 0.5 percent sulfur specification for burning. The lead emission specification of 0.6 tons per year would be exceeded if 40,000 tons of ebonite were burned in one year assuming no flue gas cleaning and 100 percent lead emissions to the atmosphere. Consequently, it is not anticipated that burning the ebonite as a fuel will constitute an environmental problem.

#### 5.1.3.2 Cement Plant Fuel

A cement plant is operated by Ashgrove in Durky in the eastern part of Oregon. Two cement plants are located in Seattle, Washington, and one of these is operated by Ideal Basic Industries (Ideal).

Mr. Ron Wallace, plant manager of the Ideal plant in Seattle, was contacted and provided with a sample of cleaned ebonite. The Seattle cement plant has, in the past, been burning battery casing chips and has the necessary permit to do so. These materials came from the Harbor Island site, and they presented no problems in the cement plant operation. The Ideal cement plant consumes 100,000 tons of coal or coke annually. After inspecting the ebonite sample of Gould site material, Mr. Wallace said he could run it through the plant.

No written correspondence has been generated on the use of ebonite as fuel. Telephone records are presented in Attachment A.

#### 5.1.4 Recycling

Samples of ebonite were sent to three recycling companies which might use the material as a filler in rubber products. One of these companies expressed an interest by responding to Canonie's questionnaire. Another company expressed an interest in receiving a sample of the material, which

was supplied to him and then distributed to potential users for test marketing. Results of this test marketing survey conducted by Mr. Don Padilla of WRL, Inc., are not expected until July 1990. ✓

Written communication for the recycling alternative is presented in Appendix B. Telephone records are located in Attachment A.

### 5.2 Off-Site Recycling Cost/Revenue

The marketing survey for the cleaned ebonite product indicates that it can very probably be used as an industrial fuel close to the Gould site. In preliminary discussions, Ideal expressed an interest in accepting the ebonite for use at the Seattle cement plant but would not be prepared to pay for it. This means that shipping costs from the site to Seattle may have to be paid by the project. Other arrangements may also be made. If cement for stabilization is purchased from Ideal, the delivery trucks could haul ebonite to Seattle at no charge. ✓ ✓ ✓

It is not anticipated that PGE would be willing to pay for the ebonite since this relatively small amount causes more inconvenience than it is worth. Considering that both these sites are within a 170-mile radius of the Gould site, the cost exposure to the project is at \$21.25 per ton, or a total of \$956,000. If permits cannot be obtained to recycle the ebonite as a fuel, this material can be disposed of on-site without stabilization, as provided in Section VI of the Record of Decision. ✓

## 6.0 PLASTIC

The clean plastic product is produced in dry granular chips with a top size of 1.5 inches. This material can be drummed or stored in roll-up boxes for off-site shipment to the end-user.

### 6.1 Recycling Options

Waste plastics or scrap plastics are capable of being reprocessed into commercially acceptable plastic products. Depending on the quality of plastic, two possibilities for reprocessing can be considered:

1. Primary recycling, which involves the use of uniform uncontaminated plastic waste; or
2. Secondary recycling, which consists of scrap plastic from industrial sources that has to be reprocessed prior to further use.

Primary recycling requires high-grade feed material with tight quality controls on feed composition. The plastic produced from the Gould site may contain a variety of different types of plastic and require additional cleaning prior to recycle. This material is more suitable for secondary recycling markets.

#### 6.1.1 Recycling Companies

Plastic recycling companies have been identified from the publication of the state of California Department of Health Services (Reference 2). Recycling companies near the Gould site were contacted to reduce transportation costs, since the markets for recycled plastic are fairly widely distributed.

Preliminary contacts were made with five secondary recycling companies. Samples of plastic from the attrition scrubbing tests were sent to three of the companies. Two companies expressed interest in the product if it could be further cleaned to remove fine dust and dirt. Written responses to the





inquiries are presented in Appendix C. Telephone records are presented in Attachment A.

## 6.2 Off-Site Recycling Cost/Revenues

If the plastic can be cleaned to an acceptable level in the treatment plant, this material may sell for between 10 cents and 15 cents per pound. This price fluctuates significantly and could be higher or lower depending on market conditions at the time of remediation.

do  
not  
separate  
burning  
plastic  
/

If the plastic passes the EP Tox test for lead, but is not clean enough for recycling, there could be a "processing" charge applied resulting in a net cost to the project. In this case, it may be more cost-effective to back-fill the plastic on-site, since the tonnage is small. If the plastic is saleable, the credit to the project could amount to between \$600,000 and \$900,000, thereby offsetting the cost of recycling the other products from the treatment process.

# Canonie Environmental

January 30, 1990

Canonie Environmental Services Corp.  
94 Inverness Terrace East  
Englewood, Colorado 80150

Phone 303-790-1347  
Fax 303-790-1396  
88-099-07

Mr. Loren Mayer  
Portland General Electric  
121 SW Salmon Street  
Portland, OR 97204

## Use of Ebonite as Power Plant Fuel

Dear Mr. Mayer:

Canonie Environmental Services Corp. (Canonie) is pursuing remediation design work on a battery Superfund site in Portland, Oregon. The plan calls for the excavation of battery debris, separation and cleaning of components, and recycling of lead and other products.

I contacted you by telephone in November of last year to explore the possibility of using ebonite as a fuel in the Boardman coal-fired plant of Portland General Electric (PGE). Your initial response was positive. You said that if residual lead in the ebonite does not cause a problem, you could burn it. The lead might pose environmental and political problems. You felt that it would be important to have prior support and consent of the Environmental Protection Agency (EPA) and Oregon Department of Environmental Quality for using ebonite as a power plant fuel.

Since the ebonite comes from a Superfund site and recycling is a preferred alternative, I believe the regulatory agencies would approve the plan if it is technically sound. The ebonite for lead battery casings is made from a mixture of coal dust, rubber, oil, lime, and sulfur. The material has a heating value of 12,000 to 13,000 British Thermal Units per pound and a sulfur content of 3 percent. The size of the material will be minus 1.5 inches and plus 10 mesh. After processing and cleaning, the ebonite product will contain from 0.02 to 0.05 percent (200 to 500 parts per million) residual lead. It will pass the Extraction Procedure Toxicity test prescribed by the EPA and would be regarded as nonhazardous. At the Portland processing site about 10,000 tons will be generated each year for a period of four years, beginning in 1991. Canonie is interested in determining whether the option of using such material for fuel is practical and feasible. Since your power plant is fairly close to the processing site, we wish to pursue this option with PGE. In order to confirm the verbal communication we had on the subject, may I ask that you return a copy of this letter to me with the following brief questionnaire completed.

Mr. Ron Wallace

2

November 1, 1989

After you have had a chance to test the sample and to look at the results,  
please communicate your findings to me.

Very truly yours,

*Wolfram H. Kube*

Wolfram H. Kube  
Project Scientist

WHK/jb

cc: Mr. Roy Stienmier, Ideal Basic Industries

**Canon**leEnvironmental

# Canonie Environmental

Canonie Environmental Services Corp.  
94 Inverness Terrace East - Suite 100  
Englewood, Colorado 80111

Phone 303 790-1747

Fax 303 799-1866

88-099-07

November 1, 1989

Mr. Ron Wallace  
Ideal Basic Industries  
5400 West Marginal Way South West  
Seattle, WA 98106

## Use of Ebonite as Cement Plant Fuel

Dear Mr. Wallace:

In reference to our telephone conversation on October 30, 1989 pertaining to the possible use of ebonite (hard rubber) as fuel in your cement plant, I am sending to you under separate cover a sample of this material for testing.

Canonie Environmental Services Corp. (Canonie) is pursuing remediation design work on a battery wrecking site in Portland, Oregon. The plan calls for the excavation of the battery debris, separation of the components, and recycling of lead and other products.

After a cleaning step, the ebonite product will still contain from 0.02 to 0.05 percent (200 to 500 parts per million) residual lead, but the material will pass the extraction procedure toxicity test and is, therefore, regarded as nonhazardous.

Ebonite for lead battery casings is made from a mixture of coal dust, rubber, oil, lime, and sulfur. The material has a heating value of 12,000 to 13,000 British Thermal Units per pound and a sulfur content of 3 percent. The size of the material generated at the Portland site is going to be -1.5 inches and +10 mesh.

The ebonite product would be available for a period of four years, beginning in 1991. The amount will be approximately 10,000 tons each year, having an estimated annual fuel value of \$200,000.

At this time, Canonie is interested in determining the technical feasibility of recycling ebonite as a fuel. We believe it would be mutually beneficial to pursue this option with Ideal Basic Industries because of your proximity to the Portland site and your previous experience with this material.

FUEL

APPENDIX B  
EBONITE MARKETING DATA

TABLE A.3  
COMPANIES THAT RECEIVED LEAD FINES SAMPLES FOR EVALUATION  
(Continued)

Company Name	Address	Person Contacted	Phone Number
Master Metals, Inc.	Attn. Steve Abrams 2850 W. 3rd Street Cleveland, OH 44113	Steve Abrams	216/621-2361
River Smelting & Refining Company	Attn. Robert Grodin 4195 Bradley Road Cleveland, OH 44109	Robert Grodin	216/459-2100
Ross Metals Inc.	Attn. Larry Scheuer 100 W. Rail Road St. Rossville, TN 38066	Larry Scheuer	901/853-7701
Roth Brothers Smelting Corp.	Attn. Paul Roth Vice President 6223 Thompson Road East Syracuse, NY 13057	Lee Raymond	315/463-9500
S-G Metals Industries, Inc.	Attn. L. G. Galemba Jr. P.O. Box 2039 or 2nd Riverview Kansas City, KS 66110	Nomer Orr	913/621-4100
Pacific Chemicals Engineering, Ltd.	Attn. Dr. James R. Wolfe President 200 Union Blvd, Suite G18 Lakewood, CO 80228	James R. Wolfe	303/989-2787
Walker Industries	Attn. Mr. Walker 14300 Ilene St. Detroit, MI 48238	Dick Walker	313/491-4700
Sanford A. Estes & Assoc.	Attn. Mr. Sanford A. Estes 610 W. Ash Suite 1605 San Diego, CA 92101	Mr. Sanford A. Estes	619/233-8021

TABLE A.3

## COMPANIES THAT RECEIVED LEAD FINES SAMPLES FOR EVALUATION

Company Name	Address	Person Contacted	Phone Number
<b>Primary Lead Smelters</b>			
ASARCO Inc.	Attn. Glenn Lubers P.O. Box 7 or Highway 49 South Glover, MI 63646	John Likarish Glenn Lubers	212/510-2268 314/546-7492
Cominco	Attn. Gordon Mattson Trail, British Columbia Canada V1R4L8	Gordon Mattson	604/364-4371
<b>Secondary Lead Smelters</b>			
Alco Pacific Inc.	Attn. Morrie Kirk 16914 S. Broadway Gardena, CA 92048	Mike Meridd/Morrie Kirk	213/321-0437
Exide/General Corp.	Attn. Lou Magditz 645 Penn Reading, PA 19612	Lou Magditz	215/378-0540
General Smelting & Refining Company	Attn. Mr. W. G. Cole Jr. Highway 31 A College Grove, TN 37046	Mr. W. G. Cole Jr.	615/368-7125
Gopher Smelting & Refining Company	Attn. Mark Kutoff 3385 Highway 149 South Eagan, MN 55121	Mark Kutoff	612/454-3310
Keel Co.	Attn. Vince Lazore 327 E. Bee St. Wilmington, CA 90744	Vince Lazore	213/834-2555



TABLE A.2  
INITIAL MARKETING SURVEY RESULTS-LEAD FINES  
(Continued)

Company Name	Location	Person Contacted	Phone Number	Response
The G. A. Avril Company	Cincinnati, OH	Mr. Schneider	513/731-5133	Produce alloys. Interested in lead metal.
United American Metals	Chicago, IL	William F. Renotti	312/733-6700	Generate dross. Not interested in recycling products.
Victory White Metal Company	Cleveland, OH	Mr. Stanwick	216/271-1400	Do not know how to clean sludge from lead.
Willard Lead Products Company	Charlotte, NC	John Winkle	800/438-5052	Do not have smelter. Shut down 6 years ago.
Midco	Saint Louis, MO	Jim Bucher	314/776-5600	Out of the office. Will be back on October 30, 1989.
Three Sources Alloys & Metals	Florida	Richard Roles	407/790-7200	Send FAX with information about sludge.
Pacific Chemicals Engineering, Ltd.	Lakewood, CO	James R. Wolfe	303/989-2787	Interested to look at the sample. Will pick up sample.
Walker Industries	Detroit, MI	Mr. Walker	313/491-4700	Not economical to process sludge today. Contacted with some companies overseas & far East. Need sample of sludge.
Bergsøe Boliden Inc.	Indiana		317/747-9980	Exide Corp. plant. Call L. Magditz.
C. M. Kemp Manufacturing Co., Inc. (Perma)	Maryland		314/694-0158	Not a smelter. Company produces air separators.
Greenberg Engineering	Pennsylvania		215/839-3380	Not a smelter. Company produces smelting equipment.
IBC Corporation	Wisconsin	Gene Vlahovic	414/375-4490	Not a smelter. Company is buing/selling smelting equipment.
New Frontier Trading Corporation	California		619/225-0206	Not interested in lead sludge.
Sanford A. Estes & Associates	California	Sanford A. Estes	619/233-8021	Knows batteries business. Need a sample of sludge 5 lbs.
Sorfin International Ltd.	New York	Don Puccio	516/349-7575	Supply equipment for lead smelters.
Tolltreck International Ltd.	Colorado		303/792-5001	Design equipment for refineries and smelters.

TABLE A.2  
INITIAL MARKETING SURVEY RESULTS-LEAD FINES  
(Continued)

Company Name	Location	Person Contacted	Phone Number	Response
Magnus-Farley Industries, Inc.	Fremont, NE	John Macklin	402/721-9540	Do not believe Pb compounds can fit in their process. Makes & recycles Lead Bearings for railroad.
Master Metals, Inc.	Cleveland, OH	Steve Abrams	216/621-2361	Need sample of sludge: 5 gal. One week turn around.
New England Smelting Works, Inc.	West Springfield, MA	Sandy Saffer	413/734-6491	More involved in tin based alloys. Not interested in sludge.
Mey Smelting & Refining Company, Inc.	Brooklyn, NY	Henry Mayer	718/389-4900	Not interested because of environ. concerns (air quality).
Pacific Chloride - GNB	Columbus, GA Tampa, FL	Ken Strunk	404/689-1701	Would like to have sample 1 lb.
Panama Canal Commission	Washington D.C.	G. P. Lavecchia	202/634-6441	The operation was shut down 10 years ago.
Peerless Alloy Company	Denver, CO	Pam White	303/825-6396	Will not take ebonite or matte. Not interested in Pb sludge.
RSR Corp.	Dallas, TX Middletown, NY Indianapolis, IN Los Angeles, CA	Karl Fisher	214/631-6070	Slim to none chance they take sludge. Low grade - uphill battle.
Refined Metals Corp.	Memphis, TN Beach Grove, IN	Mr. J. T. Green	901/775-3770	Will not take sludge, containing 18-40 percent lead.
River Smelting & Refining Company	Cleveland, OH	Robert Grodin	216/459-2100	Would like to have sample 5-10 lb.
Ross Metals, Inc.	Rossville, TN	Larry Scheuer	901/853-7701	Would like to have sample 1 lb.
Roth Brothers Smelting Corp.	East Syracuse, NY	Lee D. Raymond	315/463-9500	Would like to have sample 1 lb.
S-G Metals Industries, Inc.	Kansas City, KS	Homer Orr	913/621-4100	Would like to have sample 1 lb.
Sanders Lead Company, Inc.	Troy, AL	Kenny Campbell	205/566-1563	Not interested in anything containing <50 percent lead.
Schuylkill Metals Corp.	Baton Rouge, LA Mound City, MO	Glenn Nasse	504/775-3040	Will not take sludge, containing 15-40 percent lead. Capacity problem now. May change in two years. Take 60-80 percent lead.
Standard Industries	San Antonio, TX	Steve Dubinski	512/623-3131	Not interested in anything containing <50 percent lead.

TABLE A.2  
INITIAL MARKETING SURVEY RESULTS-LEAD FINES  
(Continued)

Company Name	Location	Person Contacted	Phone Number	Response
Exide/General Corp.	Reading, PA Dallas, TX	Lou Magditz	215/378-0540	Need a sample of sludge - 5 lbs.
Federal Metal Company	Bedford, ON	Mark Magusky/ Rick Kohn	216/232-8700	Buying Brass, Zinc Scrap. Not interested in lead and sludge.
Federated-Fry Metals	Altoona, PA	Dave Comer	800/289-3797	Trying to take material containing 80-90 percent lead. Cost too much to process low grade lead material.
General Metals & Smelting Company, Inc.	Boston, MA	George Oshry	617/442-2050	Cost too much to process sludge. Will not have any value at the end. Interested in solid lead only.
General Smelting & Refining Company	College Grove, TN	Mr. W. G. Cole Jr.	615/368-7125	Need sample 5 lbs of sludge.
Globe Metals Company	Oakland, CA	Graciano M. Magtibay	415/444-2776	Use only pure lead small amount. Call Federated-Fry M
GMB	Los Angeles, CA Frisco, TX St. Paul, MN Columbus, GA	Marty Groh	213/262-1101	Need sample of sludge 5 gal.
		Ed Puckett	612/681-5307	
Gopher Smelting & Refining Company	Eagan(St. Paul), MN	Mark Kutoff	612/454-3310	Need to see sample of sludge 1lbs.
Gulf Coast Lead Company	Tampa, FL	Lonnie Payne Kay Russow	813/626-0303	Would be interested in sludge, if it does not have to be manifested. Would like to talk further. Capacity problem. Not interested in sludge at all. Hard to run through the furnace.
H. Kramer & Company	Chicago, IL	Pat Boyle	312/226-6600	Buying only brass, bronze, copper.
IMACO	Winston Salem, NC	Tom Wylam	919/777-8600	Out of the smelting business.
Interstate Lead Company	Leeds, AL	Mr. Robert Wilson	205/699-6171	Sludge 30 percent Pb is not economical to process. Interested in 70-75 percent Pb contaminated material.
Keel Co	Wilmington, CA	Vince Lazore	213/834-2550	Was refiner in Mexico. Need sample 50 lbs.
Lead Products, Inc.	Houston, TX	Mr. Robert Silmonds	713/224-9546	Not a smelter. Fabricate lead products.
Liberty Metal Company	Los Angeles, CA	W. G. Krishbaum	213/581-9171	Not interested in lead-bearing fines.

TABLE A.2

## INITIAL MARKETING SURVEY RESULTS-LEAD FINES

Company Name	Location	Person Contacted	Phone Number	Response
<b>Primary Lead Smelters</b>				
ASARCO Inc.	Omaha, NE Glover, Missouri East Helena, Montana El Paso, TX	John Likarish Peter Doddert	212/510-2268 801/262-2459	Need sludge sample 1 lb. Turn around 3-4 weeks. Depend on results may need 5 lbs sample more.
Cominco Ltd.	Trail, British Columbia	C. G. Kruss/John Reed Mr. Mattson	604/364-4137 604/364-4102	Need analyses of sludge: C, S, Si, As, Al, Sb. After that maybe will need sample 200g. Need 5 lbs sample of sludge.
DOE-RUN	Herculanium, Missouri	Dick Amistadi Larry Stoehr	314/991-7111	Plan to build smelter by 1992. Call GNB, RSR, Schuylkill. Request a letter with the description of material.
<b>Secondary Lead Smelters</b>				
AT & T Nassau Metals Corp.	Gaston, SC	Burney Bugak	803/796-4720	Capacity problem. AT&T forced them to take Pb contaminant mat-1.
Acme Alloys	Philadelphia, PA	Sidney S. Tobin	215/735-9678	Interested in solid lead. Producing alloys.
Alco Pacific Inc.	Gardena, CA	Mike Meridd/ Morrie Kirk	213/321-0437	Would be interested in sludge, if it does not have to be manifested. Would like to talk further.
Ames Metal Products Company	Chicago, IL	Mr. Sassell	312/523-3231	Buy only lead metal. Not a smelter. Call RSR; Ugin, OR.
Belmont Smelting & Refining Works Inc.	Brooklyn, NY	Robert Henning Sr.	718/342-4900	Buy only lead metal. Not a smelter. Producing alloys.
CHEMETCO Inc.	Alton, IL	Joe Messmer	618/254-0190	Will take only Cu material. Cu smelter. Call Midco.
Chicago Smelting & Refining Corp.	Chicago, IL	Mr. Lennon	312/847-1800	Buy only brass, bronze, Al. Not a smelter.
City Metals Refining Company, Inc.	Detroit, MI	Martin L. Zeldes	313/548-3010	Making lead casting, alloys. Call ASARCO, DOE-RUN, Tonolli.
Dixie Metal Corporation	Dallas, TX	George Guerrero	214/946-2132	Trying to take material containing 80-90 percent lead.
East Penn Manufacturing Company, Inc.	Lyons Station, PA	Richard A. Leiby Jr.	215/682-6361	Need to know other metals analyses before go further will not take material with >10 percent liquid.
Essex Metal Alloy Company, Inc.	Union, NJ	Phill Arnella	201/688-9010	Not a smelter. Buy only remelted lead. Manufacture wires.

TABLE A.1

LIST OF PRIMARY, SECONDARY LEAD SMELTERS, AND ALLOY PRODUCERS  
(Continued)

Company Name	Location	Person Contacted	Phone Number
Secondary Lead Smelters and Alloy Producers (Continued)			
Schuylkill Metals Corp.	Baton Rouge, LA Mound City, MO	Glenn Hesse	504/775-3040
Standard Industries	San Antonio, TX	Steve Dubinski	512/623-3131
The G. A. Avril Company	Cincinnati, OH	Mr. Schneider	513/731-5133
United American Metals	Chicago, IL	William F. Renotti	312/733-6700
Victory White Metal Company	Cleveland, OH	Mr. Starwick	216/271-1400
Willard Lead Products Company	Charlotte, NC	John Hinkle	800/438-5052
Nidco	Saint Louis, MO	Jim Bucher	314/776-5600
Three Sources Alloys & Metals	Florida	Richard Roles	407/790-7200
Pacific Chemicals Engineering, Ltd	Lakewood, CO	James R. Wolfe	303/989-2787
Walker Industries	Detroit, MI	Mr. Walker	313/491-4700
Bergsøe Boliden Inc.	Indiana		317/747-9900
C. M. Kemp Manufacturing Co., Inc. (Perma)	Maryland		314/694-0158
Greenberg Engineering	Pennsylvania		215/839-3300
IBC Corporation	Wisconsin	Gene Vlahovic	414/375-4490
New Frontier Trading Corporation	California		619/225-0206
Sanford A. Estes & Associates	California	Sanford A. Estes	619/233-8021
Sorfin International Ltd.	New York	Don Puccio	516/349-7575
Tolltreck International Ltd.	Colorado		303/792-5001

TABLE A.1

LIST OF PRIMARY, SECONDARY LEAD SMELTERS, AND ALLOY PRODUCERS  
(Continued)

Company Name	Location	Person Contacted	Phone Number
Secondary Lead Smelters and Alloy Producers (Continued)			
Liberty Metal Company	Los Angeles, CA	W. G. Krishbaum	213/581-9171
Magnus-Farley Industries, Inc.	Fremont, NE	John Macklin	402/721-9540
Master Metals, Inc.	Cleveland, OH	Steve Abrams	216/621-2361
New England Smelting Works, Inc.	West Springfield, MA	Sandy Saffer	413/734-6491
Ney Smelting & Refining Company, Inc.	Brooklyn, NY	Henry Mayer	718/389-4900
Pacific Chloride - GNS	Columbus, GA Tampa, FL	Ken Strunk	404/689-1701
Panama Canal Commission	Washington D.C.	G. P. Lavecchia	202/634-6441
Peerless Alloy Company	Denver, CO	Pam White	303/825-6394
RSR Corp.	Dallas, TX Middletown, NY Indianapolis, IN Los Angeles, CA	Karl Fisher	214/631-6070
Refined Metals Corp.	Memphis, TN Beach Grove, IN	Mr. J. T. Green	901/775-3770
River Smelting & Refining Company	Cleveland, OH	Robert Grodin	216/459-2100
Ross Metals, Inc.	Rossville, TN	Larry Scheuer	901/853-7701
Roth Brothers Smelting Corp.	East Syracuse, NY	Lee D. Raymond	315/463-9500
S-G Metals Industries, Inc.	Kansas City, KS	Homer Orr	913/621-4100
Sanders Lead Company, Inc.	Troy, AL	Kenny Campbell	205/566-1563

TABLE A.1

LIST OF PRIMARY, SECONDARY LEAD SMELTERS, AND ALLOY PRODUCERS  
(Continued)

Company Name	Location	Person Contacted	Phone Number
Secondary Lead Smelters and Alloy Producers (Continued)			
Exide/General Corp.	Reading, PA Dallas, TX	Lou Megditz	215/378-0540
Federal Metal Company	Bedford, OH	Mark Megusky/Rick Kohn	216/232-8700
Federated-Fry Metals	Altoona, PA	Dave Comer	800/289-3797
General Metals & Smelting Company, Inc.	Boston, MA	George Oshry	617/442-2050
General Smelting & Refining Company	College Grove, TN	Mr. W. G. Cole Jr.	615/368-7125
Globe Metals Company	Oakland, CA	Graciano M. Magtibay	415/444-2776
GNB	Los Angeles, CA Frisco, TX St. Paul, MN Columbus, GA	Marty Groh Ed Puckett	213/262-1101 612/681-5307
Gopher Smelting & Refining Company	Eagan (St. Paul), MN	Mark Kutoff	612/454-3310
Gulf Coast Lead Company	Tampa, FL	Lonnie Payne Kay Russon	813/626-0303
H. Kramer & Company	Chicago, IL	Pat Boyle	312/226-6600
IMACO	Winston Salem, NC	Tom Wylam	919/777-8600
Interstate Lead Company	Leeds, AL	Mr. Robert Wilson	205/699-6171
Keel Co	Wilmington, CA	Vince Lazore	213/834-2550
Lead Products, Inc.	Houston, TX	Mr. Robert Silmonds	713/224-9546

TABLE A.1

## LIST OF PRIMARY, SECONDARY LEAD SMELTERS, AND ALLOY PRODUCERS

Company Name	Location	Person Contacted	Phone Number
<b>Primary Lead Smelters</b>			
ASARCO Inc.	Omaha, NE Glover, MO East Helena, MT El Paso, TX	John Likarish Peter Doddert	212/510-2268 801/262-2459
Cominco Ltd.	Trail, British Columbia	C. G. Kruss/John Reed Mr. Mattson	604/364-4137 604/364-4102
DOE-RUN	Herculanum, MO	Dick Amistadi Larry Stoehr	314/991-7111
<b>Secondary Lead Smelters and Alloy Producers</b>			
AT & T Nassau Metals Corp.	Gaston, SC	Burney Bugak	803/796-4720
Acme Alloys	Philadelphia, PA	Sidney S. Tobin	215/735-9678
Alco Pacific Inc.	Gardena, CA	Mike Meridd/Morrie Kirk	213/321-0437
Ames Metal Products Company	Chicago, IL	Mr. Sassell	312/523-3231
Belmont Smelting & Refining Works Inc.	Brooklyn, NY	Robert Menning Sr.	718/342-4900
CHEMETCO Inc.	Alton, IL	Joe Messmer	618/254-0190
Chicago Smelting & Refining Corp.	Chicago, IL	Mr. Lennon	312/847-1800
City Metals Refining Company, Inc.	Detroit, MI	Martin L. Zeldes	313/548-3010
Dixie Metal Corporation	Dallas, TX	George Guerrero	214/946-2132
East Penn Manufacturing Company, Inc.	Lyons Station, PA	Richard A. Leiby Jr.	215/682-6361
Essex Metal Alloy Company, Inc.	Union, NJ	Phill Arnetta	201/688-9010



SHIPPING AND HANDLING INFORMATION

26. Is this material a USDOT hazardous material ( )? If yes, please give USDOT Proper Shipping Name:
- Hazard Class:  
I.D. Number:  
Reportable Quantity:
27. Please give the estimated volume of material currently available for shipment and annual generation (specify gallons, tons, cubic yards):
28. Material will be shipped as bulk liquid ( ), bulk solid ( ), drum ( ), other container( ). If drum or other container, specify type and size (must meet USDOT applicable specifications)(
29. Total shipment size will be (specify number of containers and total gallons, tons, or cubic yards):
30. Shipment(s) will be one-time ( ), or routine ( ). If routine, specify anticipated time interval (weekly, monthly, quarterly, etc.):
31. Are special handling precautions necessary ( )? If yes, please attach precautions.
32. Do you have a Material Safety Data sheet for this material ( )? If yes, please attach a copy.
33. Do you have a shipping label for this material ( )? If yes, please attach a copy.
34. Is there a state requirement to manifest this material as a hazardous waste upon shipment? ( )

Signature of person responsible for completing this questionnaire:

\_\_\_\_\_  
Date: \_\_\_\_\_

Rev: 8/15/89

CHEMICAL CHARACTERISTICS OF THE MATERIAL

NOTE: Any material to be handled by ASARCO must be well characterized chemically. ASARCO will require a representative sample prior to any formal contract. A sample is not necessary as part of this questionnaire. Client company will be separately contacted for a sample when needed.

21. A typical analysis is available ( ). If yes, please attach. If no, please list known components and range of concentration (%).

<u>COMPONENT</u>	<u>HIGH (%)</u>	<u>LOW (%)</u>
------------------	-----------------	----------------

22. Please list the total concentration in % or ppm (please specify) for the following metals: antimony, arsenic, barium, cadmium, chromium, copper, iron, lead, mercury, nickel, selenium, silver, thallium, and zinc.

<u>METAL</u>	<u>HIGH (for ppm)</u>	<u>LOW (for ppm)</u>
--------------	-----------------------	----------------------

23. pH of material (indicate range, if appropriate):

24. Moisture % (indicate range if appropriate):

25. Does this material contain cyanides ( ), sulfides ( ), sulfates ( ), PCB's ( ), phenolics ( ), asbestos ( ), known carcinogens ( ), suspect carcinogens ( ), poisons ( ), explosives ( ), radioactivity ( ), pesticides/herbicides ( ), pyrophoric constituents ( )?

PHYSICAL CHARACTERISTICS OF THE MATERIAL

13. Physical state at 70°F is solid ( ), semi-solid ( ), liquid ( ).
14. Describe the nature of material; e.g., powder, granules, emulsion, etc.
15. Is the material homogeneous ( ) or heterogeneous ( )? If heterogeneous, please describe:
16. Color is:
17. Material contains free liquids ( )? If yes, volume percentage:
18. Does material have an odor ( )? If yes, is odor mild ( ) or strong ( )? Please describe odor:
19. Specific gravity of material (water = 1.0):
20. Flash point (degrees F): Open cup test ( ) or closed cup ( ).

GENERAL MATERIAL INFORMATION

8. Name of material:
9. Is this a USEPA hazardous waste, as defined under 40CFR Part 261? (Circle below)
- Yes / No / Presently exempt from regulation.
- If yes, is this a listed waste pursuant to 40CFR Part 261, Subpart D ( ), or characteristic waste pursuant to Subpart C ( ).
- Please give hazardous waste number(s) and designate all applicable characteristics.
10. Pursuant to 40CFR Part 261, is the material a spent material ( ), a sludge ( ), a by-product ( ), a commercial chemical ( ), scrap metal ( ), or other material ( )? If "other material", or uncertain, please describe in detail.
11. Is this material subject to classification under separate state regulation ( )? If yes, give State code(s) and explain.
12. For characteristic wastes, please describe testing procedures and results. Use additional sheet if necessary.

4. Questionnaire completed by (name, title and telephone):
5. Technical contact person (name, title and telephone):
6. Please explicitly state, either affirmatively or negatively, whether this material is a residue or product from the treatment of a hazardous waste, and, if so, the nature of the hazardous waste.
7. Describe, in detail, the process generating the material (use additional sheet, if necessary).

File No. \_\_\_\_\_

MATERIAL CHARACTERIZATION QUESTIONNAIRE

IMPORTANT NOTES: The person responsible for the completion of this questionnaire must understand that ASARCO intends to rely on the answers provided herein, and improper or incomplete answers could result in violations of the hazardous waste laws and regulations of the U.S.E.I.A. or of a particular state. ASARCO intends to hold responsible the company and/or individual for any such mischaracterization or omission, should it lead to such violations.

ASARCO will require, as part of the final contract, that a responsible representative of the client company certify that this questionnaire and all attached documents are complete and accurate and that all known or suspected hazards have been disclosed.

ALL INFORMATION IS CONFIDENTIAL

INSTRUCTIONS: Please do not leave any blanks. Blanks will necessitate a follow-up call. Use "Y" for Yes; "N" for No; "UNK" for Unknown; and "N/A" for Not Applicable. DO NOT use checks or dashes. Attach additional sheets as needed. Please reference the question numbers.

Are additional sheets attached? (    )  
Please indicate the number of sheets: \_\_\_\_\_

GENERAL INFORMATION

1. Client Company:
  
  
2. Address (give both mailing and street address):
  
  
  
  
3. Date:

# ASARCO

November 29, 1989  
File No. CE-CO-214

Technical Services Center  
M. O. Varner  
Director  
C. E. Holt  
Engineering Manager  
D. A. Robbins  
Environmental Sciences Manager  
M. G. King  
Research Manager

DEC 1 1989

Wolfram H. Kube  
Canonie Environmental  
94 Inverness Terrace East - Suite 100  
Englewood, CO 80122

Dear Wolfram:

Pursuant to our telephone conversation, I have enclosed a "Material Characterization Questionnaire" for you to fill out regarding lead sludge. Please return the completed Questionnaire to me at the following address:

Peter S. Dahlberg  
ASARCO, Inc.  
3422 South 700 West  
Salt Lake City, Utah 84119

Call me at (801) 262-2459 with any questions.

Sincerely,

  
PETER S. DAHLBERG

PSD:lb  
Enclosure  
cc: J.K. Likarish



NOV 3 1989  
**ROTH BROS. SMELTING CORP.**

4223 THOMPSON ROAD • P.O. BOX 838 • EAST SYRACUSE, NY 13057  
TELEPHONE: 315/463-8500 • FAX: 315/433-9088 • EASY LINK: 910 380-8093

**FAX**

November 3, 1989

Mr. Wolfram H. Kube  
Canonie Environmental Services Corp.  
94 Inverness Terrace East  
Suite 100  
Englewood, CO 80112

Dear Mr. Kube:

Thank you for submitting your sample of lead fines to Roth Bros.  
(reference your letter dated 10/27, #88-099-05).

This material, which is of too little yield to be of interest to  
us, analyzed as follows:

Cu	.10
Sn	.13
Sb	.23
Zn	.10
Pb	20.26

Moisture Content: 22.98%

We did not analyze for sulphur in this material, but did note  
that the lead factor was neutral (7).

Should you have any additional questions concerning our assay or  
interest, please do not hesitate to call. We thank you for this  
opportunity to be of service to you.

Very truly yours,

**ROTH BROS. SMELTING CORP.**

PAUL B. ROTH  
Vice President



# Canonie Environmental

October 27, 1989

Canonie Environmental Services Corp.  
94 Inverness Terrace East - Suite 111  
Englewood, Colorado 80152

Phone 303 790-1747

Fax 303 790-1747

88-099-05

Mr. Paul Roth  
Roth Brothers Smelting Corp.  
5223 Thompson Road  
East Syracuse, NY 13057

## Request for Expression of Interest

Dear Mr. Roth:

Canonie Environmental Services Corp. (Canonie) is planning to recycle lead oxide and sulfate sludge from a battery processing site for a period of four years beginning in 1991. The lead fines will amount to approximately 5,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives in shipping the concentrates from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for materials that have been reclaimed but must be reclaimed further before the materials are completely recovered. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your lead smelting operation. May I ask that you return this letter by November 27, 1989.

Very truly yours,

*W. H. Kube*

Wolfram H. Kube  
Project Scientist

WHK/jb

The sample submitted by Canonie is \_\_\_\_\_  
is not ☒ of interest to Roth  
Brothers Smelting Corp.

*[Signature]*  
Signature

*11/2/89*  
Date

# Canonie Environmental

Canonie Environmental Services Corp.  
94 Inverness Terrace East, Suite 100  
Englewood, Colorado 80151

Phone 303 790 1747  
Fax 303 799 0185

88-099-05

October 27, 1989

NOV 30 1989

Mr. Larry Scheuer  
Ross Metals, Inc.  
100 North Rail Road Street  
Rossville, TN 38066

## Request for Expression of Interest

Dear Mr. Scheuer:

Canonie Environmental Services Corp. (Canonie) is planning to recycle lead oxide and sulfate sludge from a battery processing site for a period of four years beginning in 1991. The lead fines will amount to approximately 5,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives in shipping the concentrates from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for materials that have been reclaimed but must be reclaimed further before the materials are completely recovered. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your lead smelting operation. May I ask that you return this letter by November 27, 1989.

Very truly yours,

*W. H. Kube*

Wolfram H. Kube  
Project Scientist

WHK/jb

The sample submitted by Canonie is \_\_\_\_\_  
is not \_\_\_\_\_ of interest to Ross Metals,  
Inc.

*Larry Scheuer*  
Signature

Date

11/27/89

# Canonie Environmental

October 27, 1989

NOV 20 1989

Canonie Environmental Services Corp.  
94 Inverness Terrace East  
Englewood, Colorado 80151  
Phone 303 890 0247  
Fax 303 899 0366  
88-099-05

Mr. Steve Abrams  
Master Metals  
2850 West 3rd Street  
Cleveland, OH 44113

## Request for Expression of Interest

Dear Mr. Abrams:

Canonie Environmental Services Corp. (Canonie) is planning to recycle lead oxide and sulfate sludge from a battery processing site for a period of four years beginning in 1991. The lead fines will amount to approximately 5,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives in shipping the concentrates from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for materials that have been reclaimed but must be reclaimed further before the materials are completely recovered. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your lead smelting operation. May I ask that you return this letter by November 27, 1989.

Very truly yours,

*W. H. Kube*

Wolfram H. Kube  
Project Scientist

WHK/jb

The sample submitted by Canonie is \_\_\_\_\_  
is not ☒ of interest to Master \_\_\_\_\_  
Metals.

*[Signature]*  
Signature

*11/14/89*  
Date

*PLEASE NOTE: Our first assay, which duplicates furnace recovery systems on a small scale, recovered no metal from your sample. We would entertain testing other samples for you to determine if any metallic lead is recoverable. S. A.*

DEC-19-89 TUE 11:05 .00

P. 01

(13) 834-2555  
4-KEELCO, APPLICABLE ONLY OUT OF CALIFORNIA  
(213) 834-3571

**KEELCO**

LEAD KEEL AND BALLAST SPECIALISTS

TO: Olga Erlich

ATTN: Olga Erlich

DATE: 12/19/89

FAX #: (303) 799-0186

FROM: Keel CO

RE:

REPLY REQUESTED ?:

KEELCO FAX#: 213-834-3571

NO: PAGES: 2 #

# Canorie Environmental

October 27, 1989

Canorie Environmental Services Corp.  
24 Inverness Terrace East - Suite 101  
Englewood, Colorado 80113

Phone: 303-750-1747  
Fax: 303-759-0125

88-099-05

Mr. Vince Lazore  
Keel Co.  
327 East Bee Street  
Wilmington, CA 90744

## Request for Expression of Interest

Dear Mr. Lazore:

Canorie Environmental Services Corp. (Canorie) is planning to recycle lead oxide and sulfate sludge from a battery processing site for a period of four years beginning in 1991. The lead fines will amount to approximately 5,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives in shipping the concentrates from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for materials that have been reclaimed but must be reclaimed further before the materials are completely recovered. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canorie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your lead smelting operation. May I ask that you return this letter by November 27, 1989.

Very truly yours,

*W. H. Kube*

Wolfram H. Kube  
Project Scientist

WIK/jb

The sample submitted by Canorie is  
is not 4 of interest to Keel Co. —

*Don D. Thurnman*  
Signature

Date

12/17/89

# GENERAL SMELTING & REFINING, INC.

P.O. BOX 37 - HIGHWAY 31A  
COLLEGE GROVE, TENNESSEE 37046  
Phone (615) 368-7125 • Fax (615) 368-7714

November 30, 1989

Ms. Olga Erlich  
Canonie Environmental  
94 Inveress E.  
Englewood, Colo. 80112

DEC 8 1989

Dear Ms. Erlich,

We regret that our preliminary examination of the sludge sample which you shipped to us indicated that it could not be used in our process.

Sincerely,

  
W. G. Cole, Jr.

REFUSALS

# Canonie Environmental

Canonie Environmental Services Corp.  
94 Inverness Terrace East Suite 00  
Englewood Colorado 80112

Phone: 303 790-1747

Fax: 303-799-0106

88-099-05

December 11, 1989

*att. Miss  
Erich*

Mr. Sanford A. Estes  
Sanford A. Estes & Associates  
610 W. Ash, Suite 1605  
San Diego, CA 92101

## Request for Expression of Interest

Dear Mr. Estes:

Canonie Environmental Services Corp. (Canonie) is planning to recycle lead oxide and sulfate sludge from a battery processing site for a period of four years beginning in 1991. The lead fines will amount to approximately 5,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives for shipping the concentrates from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for reclaimed materials which require further processing. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your lead smelting operation. May I ask that you return this letter by January 12, 1990.

Very truly yours,

*D. L. Shuck*

David L. Shuck  
Project Supervisor

The sample submitted by Canonie is ☒ of interest to Sanford A. Estes & Associates.

*Sanford A. Estes*  
Signature

DLS/dls

Date

*2-12-90*

Dear Miss Erlich:

We will advise you in detail our offer and proposal for handling the residual Lead, based on the sample you sent us.

FAX: 619/233 3730



# Canonie Environmental

Canonie Environmental Services Corp.  
94 Inverness Terrace East - Suite 101  
Englewood, Colorado 80110

Phone 303 790 1747  
Fax 303 799 0185

88-099-05

October 27, 1989

Mr. L. G. Galamba, Jr.  
S-G Metals Industries, Inc.  
P.O. Box 2039  
Kansas City, KS 66110

Request for Expression of Interest

Dear Mr. Galamba:

Canonie Environmental Services Corp. (Canonie) is planning to recycle lead oxide and sulfate sludge from a battery processing site for a period of four years beginning in 1991. The lead fines will amount to approximately 5,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives in shipping the concentrates from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for materials that have been reclaimed but must be reclaimed further before the materials are completely recovered. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your lead smelting operation. May I ask that you return this letter by November 27, 1989.

Very truly yours,

*W. H. Kube*

Wolfram H. Kube  
Project Scientist

WHK/jb

The sample submitted by Canonie is X  
is not    of interest to S-G Metals  
Industries, Inc.

*5659 [Signature]*  
Signature

*2/1/90*  
Date

# Canonie Environmental

DEC 2 6

October 27, 1989

Canonie Environmental Services Corp.  
94 Inverness Terrace East  
Englewood, Colorado 80151  
Phone 303 799 1747  
Fax 303 799 1166  
88-099-05

Mr. Morrie Kirk  
Alco Pacific  
16914 South Broadway  
Gardena, CA 92048

## Request for Expression of Interest

Dear Mr. Kirk:

Canonie Environmental Services Corp. (Canonie) is planning to recycle lead oxide and sulfate sludge from a battery processing site for a period of four years beginning in 1991. The lead fines will amount to approximately 5,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives in shipping the concentrates from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for materials that have been reclaimed but must be reclaimed further before the materials are completely recovered. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your lead smelting operation. May I ask that you return this letter by November 27, 1989.

Very truly yours,

*W. H. Kube*

Wolfram H. Kube  
Project Scientist

WHK/jb

The sample submitted by Canonie is X  
is not \_\_\_\_\_ of interest to Alco  
Pacific.

*Wolfram H. Kube*  
\_\_\_\_\_  
Signature

12-21-89  
\_\_\_\_\_  
Date

# Canonie Environmental

Canonie Environmental Services Corp.  
94 Inverness Terrace East - Suite 100  
Englewood, Colorado 80112

October 27, 1989

Phone 303 790 1747  
Fax 303 799 0186  
88-099-05

Mr. Lou Magditz  
Exide  
645 Penn  
Reading, PA 19612

## Request for Expression of Interest

Dear Mr. Magditz:

Canonie Environmental Services Corp. (Canonie) is planning to recycle lead oxide and sulfate sludge from a battery processing site for a period of four years beginning in 1991. The lead fines will amount to approximately 5,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives in shipping the concentrates from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for materials that have been reclaimed but must be reclaimed further before the materials are completely recovered. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your lead smelting operation. May I ask that you return this letter by November 27, 1989.

Very truly yours,

*W. H. Kube*

Wolfram H. Kube  
Project Scientist

WHK/jb

The sample submitted by Canonie is X  
is not      of interest to Exide.

*Louis J. Magditz*  
Signature  
12/19/89  
Date



**SOUTHERN  
SPECTROGRAPHIC  
LABORATORY**

P.O. BOX 183488  
IRVING, TEXAS 75018-3488  
TEL. (214) 988-1748  
METRO (214) 388-1828

## LABORATORY TEST CERTIFICATE

November 17, 1989

Exide Battery Corp.  
Metals Group  
Attn: L. Magdits  
P.O. Box 14205  
Reading, PA 19612-4205

Report: 1134-14-003

Sample: 6954 Composite

Moisture	15.9 %	
Lead	20.7	
Sulfur	4.6	
Silicon	8.2	(SiO <sub>2</sub> 17.6%)

SOUTHERN SPECTROGRAPHIC LABORATORY

  
Clara Hye  
Manager

CC: Exide Battery Corp.  
Attn: Howard Masters  
Spring Valley Rd & Nolan St  
Reading, PA 19605

DEC 27 1989

# **EXIDE CORPORATION**

December 20, 1989

Ms. Olga Erlich  
Canonie Environmental Services  
94 Inverness Terrace East - Suite 100  
Englewood, CO 80112

Dear Olga;

Exide/General Battery Corporation is a national manufacturer and reclaimer of lead acid batteries. To support manufacturing operations, Exide owns and operates three secondary lead smelters where spent lead acid batteries, as well as other lead containing materials and residues are recycled to recover lead for subsequent use in battery manufacturing operations.

The contained lead will be recovered using pyrometallurgical processes and then further refined into specification grade lead or lead alloy.

We have received your sample of lead fines (assay attached). Based upon those results, it appears that other materials, probably dirt, are contained with the battery mud (oxide/sulfate).

At this time, we feel Exide is a possible alternative when evaluating the disposition of the estimated 5000 tons. In order to conduct a more comprehensive evaluation, we would require a number of drums to process through our furnaces. Please contact me when this is possible.

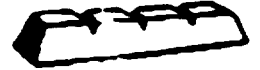
We anxiously await your response.

Very truly yours,

  
L.J. Magdits  
Manager  
Raw Materials

Attachments

(612) 454-3310



# GOPHER SMELTING & REFINING CO.

Manufacturers

LEAD PRODUCTS

3385 So. Hwy. 148  
Eagan, Minnesota 55121-2395

FAX @ 612 454-7926

## FACSIMILE TRANSMITTAL COVER LETTER

TO: \_\_\_\_\_

COMPANY: \_\_\_\_\_

FROM: \_\_\_\_\_

DATE: \_\_\_\_\_

COVER PLUS THE FOLLOWING \_\_\_\_\_ PAGE(S) ARE BEING TRANSMITTED.

MESSAGE: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

IF THERE ARE ANY PROBLEMS RECEIVING THIS TRANSMISSION  
PLEASE CALL (612) 454-3310.

# Canonie Environmental

October 27, 1989

Canonie Environmental Services Corp.  
94 Inverness Terrace East - Suite 102  
Englewood, Colorado 80112

Phone 303 740-1111  
Fax 303 740-1114  
88-099-05

Mr. Mark Kutoff  
Gopher Smelting and Refinery Corporation  
3385 Highway 149  
South Eagan, MN 55121

## Request for Expression of Interest

Dear Mr. Kutoff:

Canonie Environmental Services Corp. (Canonie) is planning to recycle lead oxide and sulfate sludge from a battery processing site for a period of four years beginning in 1991. The lead fines will amount to approximately 5,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives in shipping the concentrates from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for materials that have been reclaimed but must be reclaimed further before the materials are completely recovered. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your lead smelting operation. May I ask that you return this letter by November 27, 1989.

Very truly yours,

*W. H. Kube*

Wolfram H. Kube  
Project Scientist

WHK/jb

The sample submitted by Canonie is ☒ of interest to Gopher Smelting and Refinery Corporation.

*W. H. Kube*  
Signature

Date

11/2/89

# ASARCO

Ore Department

November 29, 1989

W. S. Latimer

Vice President

C. E. Dunne

J. K. Likarish

D. J. Cassidy

**VIA TELEFAX: (303) 799-0186**

**PAGE(S): 1**

Canonie Environmental

94 Inverness Terrace East - Suite 100

Englewood, Colorado 80112

Attention: Ms. Olga Erlich

Gentlemen:

## RECYCLING LEAD BEARING MATERIALS

The Ore Department is in receipt of the following results of a hand sample of lead bearing material submitted by Canonie to our Glover Missouri plant:

Hand

Sample   Ag   opt   Pb   %   Cu   %   Zn   %   SiO<sub>2</sub>   %   Fe   %   CaO   %   As   %   Sb   %   Bi   %

0.09   26.9   0.17   0.13   15.5   17.8   2.1   0.05   0.25   0.002

It appears that the product represented by the hand sample would be metallurgically amenable to our smelting processes at both of our two lead facilities. Prior to any expression of interest, Asarco would have to determine the regulatory classification of the material with regard to treating the material at our facilities, and secondly, determine if the facilities have uncommitted capacity.

Our Environmental Department will be forwarding a characterization form to your attention. Please complete the form and return it to them for evaluation.

If you have any questions or comments, please contact this office.

Very truly yours,

*J. K. Likarish*

J. K. Likarish

JKL:lmd



APPENDIX A  
LEAD FINES MARKETING DATA



#### REFERENCES:

'FREELANCE PLUS' SOFTWARE, MAP OF THE UNITED STATES.

12/90	DESIGNED FOR MARKETING STUDIES - REPORT	DBA	WKK	PLA
DATE	ISSUE / DIVISION	DATE	BY	BY

LOCATION OF MARKETS  
FOR RECYCLE PRODUCTS

PREPARED BY

NL INDUSTRIES  
HIGHTSTOWN, NEW JERSEY  
**Canonte Environmental**

DATE	2-19-90	FIGURE 2-1	DRAWING NUMBER
SCALE	N.T.S.		98 099 B142



## FIGURES

**TABLE 3.3**  
**CLEANED PLASTIC SPECIFICATIONS**

<b>Particle Size:</b>	<b>-1 inch, + 10 mesh</b>
<b>Specific Gravity:</b>	<b>&lt;1.0</b>
<b>Residual Lead Content:</b>	<b>0.03 to 0.09 percent lead</b>
<b>EP Tox Analysis:</b>	<b>4 to 12ppm lead</b>

**TABLE 3.2**

**CLEANED EBONITE SPECIFICATIONS**

<b>Particle Size:</b>	<b>-1 inch, +10 mesh</b>
<b>Heating value:</b>	<b>12,000 to 13,000 BTU</b>
<b>Sulfur Content:</b>	<b>3.02 percent</b>
<b>Specific Gravity:</b>	<b>1.4</b>
<b>Modified Los Angeles Abrasion Test (ASTM C-131):</b>	<b>Weight loss 6.2 percent (pass)</b>
<b>Residual Lead Content:</b>	<b>0.02 to 0.05 percent lead</b>
<b>EP Tox Analysis:</b>	<b>2 - 4 ppm lead</b>
<b>Solubility:</b>	<b>Insoluble in clean water; alkaline solutions turn yellow.</b>

**TABLE 3.1**  
**LEAD FINES SPECIFICATIONS**

Particle size: 100 percent, -10 mesh  
Moisture content: 27 - 35 percent  
Lead content: 18 - 30 percent

**CHEMICAL ANALYSES OF LEAD FINES COMPOSITE (PERCENT DRY BASIS)**

Analyte	Canonie Laboratory	Hazen Laboratory	Exide	ASARCO	Roth Bros. Smelting Corp.	Average
Aluminum	0.392					0.392
Tin	0.0991				0.13	0.115
Arsenic	0.04			0.05		0.045
Copper	0.129			0.17	0.1	0.133
Selenium	0.004					0.004
Antimony				0.25	0.23	0.24
Zinc				0.13	0.1	0.115
Lead		25.6	20.7	26.9	20.26	23.365
Bismuth		0.03		0.002		0.016
Carbon		8.79				8.79
Sulfur		4.95	4.6			4.775
Silver				0.09		0.09
Silica			17.6	15.5		16.55
Iron				17.8		17.8
CaO				2.1		2.1
Moisture			15.9		22.98	
Total						74.53

**TABLE 2.2**  
**RECYCLING COSTS/REVENUES FOR GOULD SITE PRODUCTS**

	Debit	Credit
<b>Lead Fines</b>		
Ship to Trail, B.C. Smelter for Recycle	\$1,400,000 - \$2,300,000	-
<b>Ebonite</b>		
Ship 170 miles to Cement Plant or Power Plant	1,000,000	-
<b>Plastic</b>		
Sell to Recyclers Locally	-	\$600,000 - \$900,000
<b>Total</b>	<b>\$2,400,000 - \$3,300,000</b>	<b>\$600,000 - \$900,000</b>

TABLE 2.1  
POSITIVE MARKETING RESPONSES

Company Name	Address	Person Contacted	Phone Number	Response
<b>Lead Fines</b>				
<b>Primary Lead Smelters</b>				
ASARCO Inc.	Attn. Glenn Lubers P.O. Box 7 or Highway 49 South Glover, MO 63646	John Likarish Glenn Lubers	212/510-2268 314/546-7492	Material would be metallurgically amenable to their smelting processes at both lead facilities. Need to determine regulatory classification and if the facilities are available.
Cominco	Attn. Gordon Mattson Trail, British Columbia Canada V1R4L8	Gordon Mattson	604/364-4371	Interested, but final decision not due until analytical work is completed at end of February 1990.
<b>Secondary Lead Smelters</b>				
Alco Pacific Inc.	Attn. Morrie Kirk 16914 S. Broadway Gardena, CA 92048	Mike Meridd/ Morrie Kirk	213/321-0437	Expressed interest.
Exide/General Corp.	Attn. Lou Magditz 645 Penn Reading, PA 19612	Lou Magditz	215/378-0540	Material can be processed through their furnace. In order to determine price it would be necessary to process 10-15 drums of the material through the furnace.
S-G Metals Industries, Inc.	Attn. L. G. Colamba Jr. P.O. Box 2039 or 2nd Riverview Kansas City, KS 66110	Nomer Orr	913/621-4108	Material can be processed through their furnace. In order to determine price it would be necessary to process 10-15 drums of the material through the furnace.
Sanford A. Estes & Assoc.	Attn. Mr. Sanford A. Estes 610 W. Ash Suite 1605 San Diego, CA 92101	Mr. Sanford A. Estes	619/233-8021	Interested. Going to submit proposal.
<b>Ebonite</b>				
Ideal Basic Industries	Mr. Ron Wallace, Plant Manager. 5400 N. Marginal Way SW Seattle, WA 98106	Ron Wallace Mike Bepaw	206/937-8025	Interest to use ebonite as fuel in Seattle Cement Plant. Would like to receive ebonite free-of-charge.
Portland General Electric (PGE)	Mr. Loren Mayer Portland General Electric 121 SW Salmon St. Portland, OR 97204	Loren Mayer Vol Bistriceanu	503/464-8169	Willing to accept ebonite as fuel additive in Boardman power plant, if ebonite supplier secures necessary permits and if requested by the state of Oregon.
<b>Plastic</b>				
Environmental Pacific	5285 S.W. Meadows Road, Suite 120 Lake Oswego, OR 97035	Steve M. Biedel	503/226-7331	Interested.
Pacific Resource Recycling Corp.	1300 N. River Street Portland, OR 97227	Rassel Brownier	503/284-9540	Interested if product is cleaned further.
Kinebursky Bros. Supply Inc.	1314 N. Lemon Street Anaheim, CA 92801	Aaron Zisman	714/738-8516	Interested. Need a truckload of plastic to determine the exact value & details. Plastic needs to be washed. Prepared to install plastic wash system on site.
Exide		Lou Magditz	215/378-0540	Plastic not considered valuable material. Their plastic plant is in PA. Transport. Plastic on today's market costs 15-16¢/lbs.



## TABLES

## REFERENCES

### Reference 1

List of 52 secondary smelters and annual production figures of larger firms for the years 1987 and 1988, supplied by Bill Woodbury of the U.S. Bureau of Mines, Washington, D.C. [Telephone: (202) 634-1083]

List of operating secondary lead smelters containing 30 entries, supplied by Judy King of the Washington, D.C. law firm of Fox, Weinberg & Bennett. [Telephone: (202) 788-2300]

Buyer's Guide of the Independent Battery Manufacturers Association listing 18 smelters in the United States. [Telephone: (813) 586-1408]

### Reference 2

Radimsky, J. et al: Commercial Hazardous Waste Facilities for Recycling/Treatment/Disposal. State of California, Department of Health Services, December 1988.

## REFERENCES

## 8.0 OFF-SITE SHIPPING REGULATIONS

Regulations controlling shipment of products, which do not pass the EP Tox test for lead (eg, fines concentrate), to recycling facilities were evaluated during the marketing study and are summarized in Appendix D. The regulatory path for defining and regulating the waste under the RCRA is:

1. The lead fines concentrate is a "solid waste" and a "hazardous waste" due to levels of lead (261.1).
2. Procedures are established for obtaining a variance from the classification as a hazardous solid waste since the concentrates are a recyclable material, and further reclamation is required to completely recover the lead product (261.1, 260.30, and 260.31).
3. Hazardous wastes that are recycled are excluded from RCRA regulations (261.6, Subpart C, Recyclable Materials Used in a Manner Constituting Disposal, and Subpart G 266.80, Spent Lead and Batteries Being Reclaimed).
4. Regulations governing use of recyclable materials exclude the shipment of concentrates under RCRA regulations Parts 262 through 266.

The material from the Gould site will not require manifesting as hazardous waste when in transit to a licensed recycling facility. The shipment will be required to conform with the Department of Transportation regulations.

## 7.0 METALLIC LEAD CONCENTRATE

A bulk metallic lead concentrate was not made during the pilot test program, although bench tests indicated that this material could be produced during remedial action at the site. If a concentrate is produced, it will likely contain between 20 to 30 percent lead and could be upgraded to more than 60 percent with simple mechanical equipment. In this case, the material would be recycled to a lead smelter with the lead fines.

On a preliminary basis, it is assumed that this small amount of material can be upgraded to a lead concentration that would cover the cost of transportation and process, with no net cost or revenue to the project.

Mr. Loren Mayer

2

January 30, 1990

The plan of using processed ebonite from a Portland Superfund site as power plant fuel additive is \_\_\_\_\_ is not \_\_\_\_\_ of interest to PGE. PGE is \_\_\_\_\_ is not \_\_\_\_\_ prepared to help Canonie define technical and environmental impacts that arise from burning ebonite.

Very truly yours,

*Wolfram H. Kube / 2985*

Wolfram H. Kube  
Project Scientist

WHK/ps

**Canonie**Environmental

RECYCLING  
(COMMERCIAL)

# Canonie Environmental

January 16, 1990

Canonie Environmental Services Corp.  
44 Inverness Terrace East  
Englewood, Colorado 80151  
Phone: (303) 783-1247  
Fax: (303) 783-1194  
88-099-07

Mr. Sanford A. Estes  
Sanford A. Estes & Associates  
610 West Ash, Suite 1605  
San Diego, CA 92101

## Request for Expression of Interest

Dear Mr. Estes:

Canonie Environmental Services Corp. (Canonie) is planning to recycle +10 mesh cleaned ebonite from a battery processing site for a period of four years beginning in 1991. At present, we would expect to generate approximately 10,000 tons per year of by-product material in each of four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives in shipping the concentrates from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for materials that have been reclaimed but must be reclaimed further before the materials are completely recovered. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

Ebonite for lead battery casings is made from a mixture of coal dust, rubber, oil, lime, and sulfur. The sample sent to you was obtained from an automobile battery breaking facility. It has been thoroughly washed to remove the acid and adhering lead compounds. After washing, it contained from 0.02 to 0.05 percent (200 to 500 parts per million) residual lead. An Extraction Procedure Toxicity (EP Tox) test was then performed on the sample to determine the long-term leachability of heavy metals from matrix material. It indicated that 1.68 milligrams per liter (mg/l) of lead was extractable. Materials with a lead value below 5 mg/l are considered nontoxic at present by the Environmental Protection Agency.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the



Mr. Sanford A. Estes

2

January 16, 1990

material could be used in your operation. May I ask that you return this letter by January 31, 1990.

Very truly yours,

*W. H. Kube*

Wolfram H. Kube  
Project Scientist

WKK/jb

The sample submitted by Canonie is \_\_\_\_\_  
is not X of interest to Sanford A.  
Estes & Associates.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**Canonie** Environmental

# Canonie Environmental

January 16, 1990

Canonie Environmental Services Corp.  
4400 University Avenue East  
Englewood, Colorado 80155  
Phone: (303) 755-1747  
Fax: (303) 755-1747  
88-099-07

Mr. Steve M. Biedel  
Environmental Pacific Corp.  
5285 SW Meadows Road, Suite 120  
Lake Oswego, OR 97035

## Request for Expression of Interest

Dear Mr. Biedel:

Canonie Environmental Services Corp. (Canonie) is planning to recycle +10 mesh cleaned ebonite from a battery processing site for a period of four years beginning in 1991. At present, we would expect to generate approximately 10,000 tons per year of by-product material in each of four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives in shipping the concentrates from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for materials that have been reclaimed but must be reclaimed further before the materials are completely recovered. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

Ebonite for lead battery casings is made from a mixture of coal dust, rubber, oil, lime, and sulfur. The sample sent to you was obtained from an automobile battery breaking facility. It has been thoroughly washed to remove the acid and adhering lead compounds. After washing, it contained from 0.02 to 0.05 percent (200 to 500 parts per million) residual lead. An Extraction Procedure Toxicity (EP Tox) test was then performed on the sample to determine the long-term leachability of heavy metals from matrix material. It indicated that 1.68 milligrams per liter (mg/l) of lead was extractable. Materials with a lead value below 5 mg/l are considered nontoxic at present by the Environmental Protection Agency.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the

Mr. Steve M. Biedel

2

January 16, 1990

material could be used in your operation. May I ask that you return this letter by January 31, 1990.

Very truly yours,

*W. H. Kube*

Wolfram H. Kube  
Project Scientist

WKK/jb

The sample submitted by Canonie is \_\_\_\_\_  
is not \_\_\_\_\_ of interest to Environmen-  
tal Pacific Corp.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**Canonie**Environmental



# ENVIRONMENTAL PACIFIC CORPORATION

Resource Recovery • Hazardous Waste Disposal

October 10, 1989

Ms. Olga Erlich  
CANONIE ENVIRONMENTAL SERVICES CORP.  
94 Inverness Terrace East, Suite 100  
Englewood, CO 80112

OCT 12 1989

Dear Ms. Erlich:

In regard to your profile submittal concerning battery parts and cases, we will need additional information.

Firstly, we will need to know the generator's name and their EPA ID number (if applicable). Also, we will need the generator to sign off on the profile.

Secondly, EPC will need the flash point of the material. A qualified and certified lab will be able to provide that information for you based on a representative composite sample.

Thirdly, please supply us with the lab documentation concerning the "Metals" analysis. This is of vital importance.

Lastly, we will need a representative sample.

Thank you for considering EPC for your disposal/reclamation needs. We look forward to the possibility of serving you.

Sincerely,  
ENVIRONMENTAL PACIFIC CORPORATION

*Charles W. Geiger*  
Charles W. Geiger  
Amity Plant Manager

CWG/des

LTR.1010



# ENVIRONMENTAL PACIFIC CORPORATION

Resource Recovery • Hazardous Waste Disposal

May 31, 1989

Canonie Environmental  
94 Inverness Terrace E. Suite 100  
Eaglewood, CO 80112  
Attn: Olga Erlich

JUN 5 1989

Dear Ms. Erlich:

Thank you for your interest in Environmental Pacific Corporation.

EPC recognizes that the handling of hazardous waste is very serious, not only for the generator but for the TSDF. Through our awareness of this heavily regulated area EPC has developed methods to recycle hazardous waste to minimize your liability. We are the only reclaimer in the U.S., of certain hazardous waste materials. For your liability protection, it is our policy that nothing is left behind to be landfilled or disposed of in any other way in the course of our recycling process. We are associated with Intercon Transport Inc., experienced in transporting hazardous waste, who would be happy to arrange transporting as needed.

Please find enclosed copies of our Material Management Agreement and Tote Lease Agreement. Please sign and date the agreements and return both signed copies to me; we will then sign and return one copy of each to you for your records. We do this in order that we might complete a file for you so as to be ready to do business when you are. You will also find our current PART A, which outlines the types of hazardous waste we can receive. Before materials can be shipped to Amity, the Plant Manager needs a completed work order and Waste Profile and if possible correct Material Safety Data Sheet (MSDS) for each type of material. Other items in the packet should be helpful in our business dealings.

Pricing on any material is subject to an individual waste stream analysis (State Certified), and approval by our plant manager.

You will soon be receiving, from our insurance company, a verification of our insurance coverage. If you have any questions, please call me at (503) 226-7331. We look forward to a long and beneficial business relationship.

Sincerely,

Steven M. Biedel  
Vice President - Operations

# Canonie Environmental

Canonie Environmental Services, Inc.  
34 Inverness Parkway East  
Englewood, Colorado 80155

Phone (303) 799-1147

Fax (303) 799-1148

88-099-07

January 3, 1990

Mr. Don Padilla  
WRC Inc.  
7623 N. Lavaun Drive  
Louviers, CO 80131

## Marketing of Ebonite

Dear Mr. Padilla:

Enclosed is the Material Safety and Data Sheet for the sample of +10 mesh cleaned ebonite submitted to you on October 15, 1989 for purposes of a marketing evaluation.

Ebonite for lead battery casings is made from a mixture of coal dust, rubber, oil, lime, and sulfur. The sample sent to you was obtained from an automobile battery breaking facility. It has been thoroughly washed to remove the acid and adhering lead compounds. After washing, it contained from 0.02 to 0.05 percent (200 to 500 parts per million) residual lead. An Extraction Procedure Toxicity (EP Tox) test was then performed on the sample to determine the long-term leachability of heavy metals from matrix material. It indicated that 1.68 milligrams per liter (mg/l) of lead was extractable. Materials with a lead value below 5 mg/l are considered nontoxic at present by the Environmental Protection Agency.

Canonie is evaluating recycling options for this by-product material. We would appreciate your assistance in identifying potential markets for the material. At present, we would expect to generate approximately 10,000 tons per year of by-product material for a period of four years beginning in 1991.

Your assistance in identifying potential recycle options would be greatly appreciated.

Very truly yours,



David L. Shuck  
Senior Analyst

DLS/ps

Enclosure

# NL Chemicals MATERIAL SAFETY DATA SHEET

12/22/89

MANUFACTURER'S NAME NL CHEMICALS / NL INDUSTRIES, INC. - ENVIRONMENTAL CONTROL DEPARTMENT				DATE 12/22/89	
STREET ADDRESS P.O. BOX 1090, WYCOFF MILLS RD., HIGHTSTOWN, N.J. 08520		REASON FOR REVISION NEW		SEALED N/A	
PRODUCT CLASS EBCONE - Hard Rubber	MANUFACTURER'S PRODUCT NO. None	TRADE NAME None		<input type="checkbox"/> MIXTURE <input checked="" type="checkbox"/> CHEMICAL CAS # N/A	

INGREDIENT	PERCENT BY WEIGHT	PPM	mg/m <sup>3</sup>	LEL %	VAPOR PRESSURE mm Hg @ 68°F
Product is hard rubber from washed reclaimed battery casings. May contain trace amount of lead.					
Subject to reporting requirements under SARA Title III, Section 313? ( ) Yes (x) No					
Listed as a possible carcinogen: NTP (No), IARC (No), OSHA (No)					

BOILING RANGE  
Not Applicable

VAPOR DENSITY	EVAPORATION RATE	% VOLATILE BY VOLUME	WEIGHT PER GALLON	SPECIFIC GRAVITY
<input type="checkbox"/> HEAVIER N/A <input type="checkbox"/> LIGHTER THAN AIR	<input type="checkbox"/> FASTER N/A <input type="checkbox"/> SLOWER THAN ETHER	—	—	1.3

DOT CATEGORY N/A	FLASH POINT N/A	LEL N/A
---------------------	--------------------	------------

EXTINGUISHING MEDIA

☐ WATER FOG ☐ FOAM ☐ OTHER  
☐ CARBON DIOXIDE ☐ DRY CHEMICAL N/A

UNUSUAL FIRE AND EXPLOSION HAZARDS

None

SPECIAL FIRE FIGHTING PROCEDURES

None

STABILITY <input type="checkbox"/> UNSTABLE <input checked="" type="checkbox"/> STABLE	CONDITIONS TO AVOID None
---	-----------------------------

INCOMPATIBILITY  
MATERIALS TO AVOID  
None

HAZARDOUS DECOMPOSITION PRODUCTS  
None

HAZARDOUS POLYMERIZATION <input type="checkbox"/> MAY OCCUR <input checked="" type="checkbox"/> WILL NOT OCCUR	CONDITIONS TO AVOID None
---	-----------------------------

None Assigned

HAZARD STATEMENT

Prolonged inhalation of dusts may result in irritation of the respiratory tract.

EMERGENCY AND FIRST AID PROCEDURES

Eyes: Normal washing to remove dust.

Inhalation: Remove to fresh air.

SPILLS OR LEAKS: CLEANUP PROCEDURES

Normal precautions for nuisance dust should be observed in case of spills.

Avoid prolonged inhalation of dust.

WASTE DISPOSAL METHOD

Dispose in accordance with local, state and federal regulations.

RESPIRATORY PROTECTION

Use of NIOSH\* approved dust respirator is recommended.

\*National Institute for Occupational Safety and Health.

VENTILATION

Provide as necessary.

PROTECTIVE GLOVES

None

EYE PROTECTION

Normal protection against foreign substances as needed - safety goggles.

None

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Normal precautions for nuisance dust should be provided.

OTHER PRECAUTIONS

None

NSA Hazardous Materials Identification System (HMIS):

Health 0; Flammability 0; Reactivity 0; Personal Protection

WHMIS (Canada)

Controlled Product

YES

N

X



**MUNICIPAL CONSTRUCTION**

# STATE OF COLORADO

DEPARTMENT OF HIGHWAYS

4201 East Arkansas Ave  
Denver, Colorado 80222  
(303) 757-9011

NOV 13 1989



November 9, 1989

Mr. Wolfram H. Kube  
Canonie Environmental Services Corp.  
94 Inverness Terrace East - Suite 100  
Englewood, CO 80112

Dear Mr. Kube:

Thank you for your letter dated October 27, 1989, regarding the use of Ebonite as a Highway Construction material.

It is my personal opinion, based on looking at the sample of ebonite you showed us, that it is not suitable to include into our asphalt mixes. The material appears to be too soft to be used as a substitute for quality aggregates. The fact that it still contains traces of lead would be another reason I would not recommend its use.

Thanks again for the opportunity to discuss this material with you.

Yours truly,

A handwritten signature in dark ink, appearing to read "Frank Abel", is written over the typed name.

Frank Abel  
Staff Materials Engineer

# Canonie Environmental

October 27, 1989

Canonie Environmental Services Corp.  
94 Inverness Terrace East - Suite 101  
Englewood, Colorado 80151

Phone 303 790 1047

Fax 303 799 0186

88-099-07

Mr. Frank Abel  
State of Colorado  
Department of Highways  
4340 East Louisiana Avenue  
Denver, CO 80222

## Use of Ebonite in Highway Construction Material

Dear Mr. Abel:

Thank you for the opportunity to discuss with you on October 27, 1989, the idea of using ebonite (hard rubber) as an additive in road construction material. The sample I carried with me was obtained from an automobile battery breaking facility and was thoroughly washed to remove the acid and adhering lead compounds. An extraction procedure toxicity test (EPTox) was performed on this sample, and the result showed that 1.68 milligrams/liter (mg/l) of lead was extracted in this standard test. A lead content below 5 mg/l is considered non-toxic. The EPTox test is particularly useful for determining long-term toxicity of heavy metals in the ground water environment.

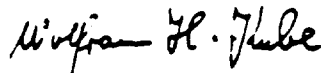
Ebonite for lead battery casings is made from a mixture of coal dust, rubber, oil, lime, and sulfur. The material is not nearly as hard as the typical aggregate used in road construction. Because of its insufficient resistance to degradation, it is probably not suitable as an aggregate in asphalt or concrete.

After the hard rubber fragments have been cleaned to pass the EPTox test, they contain from 0.02 to 0.05 percent (200 to 500 parts per million) residual lead. When I mentioned this, you were concerned about using a lead source material in highway construction.

Canonie Environmental Services Corp. is evaluating recycling options for ebonite wastes. It would be very helpful if you could provide me with a letter from the Colorado Department of Highways stating your opinion concerning the use of lead-bearing material in highway construction. You may also want to mention the department's position on lead in paint.

Your response will help us to put this recycle option in the proper perspective. Thank you for your cooperation.

Very truly yours,



Wolfram H. Kube  
Project Scientist

WHK/jb

JAN 5 1990

# STATE OF COLORADO

## COLORADO DEPARTMENT OF HEALTH

4210 East 11th Avenue  
Denver, Colorado 80220-3716  
Phone (303) 320-8333

Telex:  
303-322-9076 Main Building, Denver  
303-320-1529 Pharmigan Place, Denver  
303-248-7198 Grand Junction Regional Office



Roy Roman  
Governor  
Thomas W. Hahn, Jr.  
Executive Director

January 3, 1990

Mr. David L. Shuck  
Canonie Environmental Services Corp.  
94 Inverness Terrace East - Suite 100  
Englewood, Colorado 80112

Re: Use of Ebonite in Recreational Construction Material

Dear Mr. Shuck:

This letter is in response to your letter of November 7, 1989, and as a follow-up to my telephone conversation with Ms. Olga Erlich, of your office, on January 2, 1990.

As I explained to Ms. Erlich, the only regulations of which I am aware governing the use of lead-bearing materials are the Colorado Hazardous Waste Management Regulations (6 CCR 1007-3). These regulations define what is considered a hazardous waste and provide for its proper disposal. It is incorrect to state, as you have in your letter, that a substance whose EP Tox test concentration is below the regulatory standard is "non-toxic". This test is for the purpose of defining a hazardous waste, and thereby its proper management under our regulations.

Although your letter contains little information concerning the ebonite washing process, it is quite likely that the waste generated is subject to the hazardous waste regulations.

Other than these observations, the Hazardous Materials and Waste Management Division of the Colorado Department of Health has no opinion on the use of lead-bearing material in recreational construction. If you have any further questions concerning this subject, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Roger Schimmel".

Roger Schimmel  
Public Health Engineer  
Hazardous Materials and  
Waste Management Division

RS:lh:5750K

# CanonieEnvironmental

November 7, 1989

Canonie Environmental Services Corp.  
84 Inverness Terrace East  
Englewood, Colorado 80111  
Phone 303 799 1147  
Fax 303 799 1186  
88-099-07

Mr. Neil Sperandeo  
Denver Parks and Recreation  
1805 Bryant Street  
Denver, CO 80204

## Use of Ebonite in Recreational Construction Material

Dear Mr. Sperandeo:

Olga Erlich appreciated the opportunity of discussing with you on November 1, 1989, the idea of using ebonite (hard rubber) as an additive in recreational asphalt. The material was obtained from an automobile battery breaking facility and was thoroughly washed to remove the acid and adhering lead compounds. An extraction procedure toxicity test (EP Tox) was performed on this sample, and the result showed that 1.68 milligrams per liter (mg/l) of lead was extracted in this standard test. A lead content below 5 mg/l is considered non-toxic. The EP Tox test is particularly useful for determining long-term toxicity of heavy metals in the ground water environment.

Ebonite for lead battery casings is made from a mixture of coal dust, rubber, oil, lime, and sulfur. The material is not nearly as hard as the typical aggregate used in road construction. Because of its insufficient resistance to degradation, it is probably not suitable as an aggregate in asphalt or concrete.

After the hard rubber fragments have been cleaned to pass the EP Tox test, they contain from 0.02 to 0.05 percent (200 to 500 parts per million) residual lead.

Canonie Environmental Services Corp. is evaluating recycling options for this ebonite waste. It would be very helpful if you could provide me with a letter from the Denver Parks and Recreation stating your opinion concerning the use of lead-bearing material in recreational construction.

Your response will help us to put this recycle option in the proper perspective. Thank you for your cooperation.

Very truly yours,



David L. Shuck  
Senior Analyst

DLS/ps

# Canonie Environmental

November 7, 1989

Canonie Environmental Services Corp.  
94 Inverness Terrace East, Suite 100  
Englewood, Colorado 80111

Phone: 303-790-1747

Fax: 303-799-0186

88-099-07

Mr. Roger Schimmel  
State of Colorado  
Department of Health  
4210 East 11th Avenue, Room 351  
Denver, CO 80220

## Use of Ebonite in Recreational Construction Material

Dear Mr. Schimmel:

Olga Erlich appreciated the opportunity of discussing with you on November 3, 1989, the idea of using ebonite (hard rubber) as an additive in recreational asphalt. This material was obtained from an automobile battery breaking facility and was thoroughly washed to remove the acid and adhering lead compounds. An extraction procedure toxicity test (EP Tox) was performed on this sample, and the result showed that 1.68 milligrams/liter (mg/l) of lead was extracted in this standard test. A lead content below 5 mg/l is considered non-toxic. The EP Tox test is particularly useful for determining long-term toxicity of heavy metals in the ground water environment.

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After the hard rubber fragments have been cleaned to pass the EP Tox test, they contain from 0.02 to 0.05 percent (200 to 500 parts per million) residual lead.

Canonie Environmental Services Corp. is evaluating recycling options for this ebonite waste. It would be very helpful if you could provide me with a letter from the Colorado Department of Health stating your opinion concerning the use of lead-bearing material in recreational construction.

Your response will help us to put this recycle option in the proper perspective. Thank you for your cooperation.

Very truly yours,



David L. Shuck  
Senior Analyst

DLS/ps

**TEST RESULTS FOR CONCRETE**

100-44160-405-2

As requested, we have completed a modified Los Angeles abrasion test on a sample of Ebonite received at our Denver laboratory on October 30, 1989. It should be noted that both the amount of material and size fractions used were not in accordance with the ASTM standard C-131 due to the lack of material. The results are as follows:

<u>Original Weight of Sample (g)</u>	<u>Final Weight of Sample (g)</u>	<u>% Loss</u>
4470.5	4195.5	6.2

If you have any questions or if I can be of further assistance, please call.

Sincerely,

James D. Mael

Jane D. Maeder, A.E.T.  
Materials Laboratory Supervisor

Rev. By: SKM

JDM/China



ASTM TESTS  
FOR  
ASPHALT

# ASTM STANDARD TESTS FOR ASPHALT AGGREGATES

- D 692-88 Standard Specification for Coarse Aggregate for Bituminous Paving Mixtures
- D 693-84 Standard Specification for Crushed Aggregate for Macadam Pavements
- D 1073-88 Standard Specification for Fine Aggregate for Bituminous Paving Mixture
- C 131-81 Standard Test Method for Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los - Angeles Machine
- C 535-81 Standard Test Method for Resistance to Degradation of Large Size Coarse Aggregate by Abrasion and Impact in the Los - Angeles Machine
- D 242-85 Standard Specification for Mineral Filler for Bituminous Paving Mixtures
- D 4318-84 Standard Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils

TEST RESULTS FOR ASPHALT

HEATING TEST DONE BY  
HAZEN RESEARCH, INC. ON EBONITE

Material

Cleaned ebonite (Rhône-Poulenc buried casings after two-stage attrition scrub) +10 mesh size fraction.

Procedure

Specified material (weight recorded) was placed in the furnace and heated to 350 degrees Fahrenheit (°F). Test time, 6.5 hours.

Observations

At 210°F, ebonite started to smell like burning plastic. This smell continued through the rest of the test. At 350°F the material still looked the same; no melting occurred, no cracks were noticed, and the material was not sticking to the metal rod.

## MATERIAL SPECIFICATIONS

# Witco

Richardson Battery Parts Division  
Witco Corporation, 2701 Lake Street, Melrose Park, IL 60160 Telephone 312-344-4300

OCT. 1 1989

September 29, 1989

Ms. Olga Erlich  
Canonie Environmental  
94 Inverness Terrace-East  
Suite 100  
Englewood, CO 80112

Dear Ms. Erlich:

Per your recent request, enclosed please find the MSDS forms for Hard Rubber Containers that you require.

If we can be of further assistance, please contact us.

Yours truly,

RICHARDSON BATTERY PARTS DIV.  
Witco Corporation



Alan L. Schmidt  
Vice President of Sales

ALS:mab

Enclosure

cc: D. L. Pierson

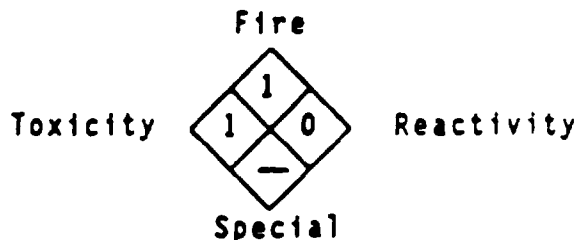
# W I T C O   M A T E R I A L   S A F E T Y   D A T A   S H E E T

Hard Rubber Containers

PAGE 1

Product Code: RBP MAST 06

HAZARD RATING  
 N 4 - Extreme  
 F 3 - High  
 P 2 - Moderate  
 A 1 - Slight  
 0 - Insignificant



## =====

### DIVISION AND LOCATION---SECTION I

## =====

Division: RICHARDSON BATTERY PARTS

Location: MELROSE PARK, ILLINOIS

2701 LAKE STREET, MELROSE PARK, IL, 60160

Emergency Telephone Number: 312 344-4300

Transportation Emergency: CHEM TREC 1-(800) 424-9300 (U.S. and Canada)

## =====

### CHEMICAL AND PHYSICAL PROPERTIES---SECTION II

## =====

Chemical Name:

filled-rubber compound

Formula: hard rubber mixture

Hazardous Decomposition Products:

carbon monoxide and carbon dioxide from burning.  
 oxides of sulfur

Incompatibility (Keep away from):

strong oxidizers such as hot nitric acid.

Toxic and Hazardous Ingredients:

none

Form: rigid thermoset rubber

Odor: not appreciable

Appearance:

Color: black

Specific Gravity (water=1): about 1.30

Boiling Point: Not applicable

Melting Point: Not applicable

Solubility in Water: 0%

Volatile (by weight %): in 68 hours, at 150°F, less than 0.20

Evaporation Rate: Not applicable

Vapor Pressure (mm Hg at 20°C): 0

Vapor Density (air=1): Not applicable

pH (as is): Not applicable

Stability: Product is stable under normal conditions

Viscosity SUS at 100°F: Not applicable

## =====

### FIRE AND EXPLOSION DATA---SECTION III

## =====

Special Fire Fighting Procedures:

standard procedure for Class A fires

(Continued on next page)

W I T C O M A T E R I A L S A F E T Y D A T A S H E E T

Hard Rubber Containers

PAGE 2

Product Code: RBP MAST 06

(Section III continued)

Unusual Fire and Explosion Hazards:

none

Flashpoint: (Method Used) No data available

Flammable limits %: Not applicable

Extinguishing agents:

Drychemical or Waterspray or CO<sub>2</sub> or Foam or Sand/Earth  
Exposed material may be cooled with water.

=====

HEALTH HAZARD DATA---SECTION IV

=====

Permissible concentrations (air):

Not applicable

Chronic effects of overexposure:

No data available

Acute toxicological properties:

No data available

Emergency First Aid Procedures:

Eyes: Not applicable

Skin Contact: If burned by contact with hot material, cool burned skin  
area as quickly as possible by immersing in cold water, or  
applying cold water. Call a physician.

Inhalation: Not applicable

If Swallowed: Not applicable

=====

SPECIAL PROTECTION INFORMATION---SECTION V

=====

Ventilation Type Required (Local, mechanical, special):

Not applicable

Respiratory Protection (Specify type):

none required

Protective Gloves: Not applicable

Eye Protection: Chemical safety goggles.

Other Protective Equipment:

Not applicable

=====

HANDLING OF SPILLS OR LEAKS---SECTION VI

=====

Procedures for Clean-Up:

Not applicable

Waste Disposal:

Dispose of in accordance with all applicable federal, state and local  
regulations.

(Continued on next page)



W I T C O   M A T E R I A L   S A F E T Y   D A T A   S H E E T

Hard Rubber Containers

PAGE 3

Product Code: RBP MAST 06

=====

SPECIAL PRECAUTIONS---SECTION VII

=====

Precautions to be taken in handling and storage:

Avoid excess storage temperature for Quality Control.

Ordinary sprinklered warehouse conditions are suitable.

Maximum Storage Temperature: 60°C (140°F)

=====

TRANSPORTATION DATA---SECTION VIII

=====

D.O.T.: Not Regulated

Reportable Quantity: Not applicable

Freight Classification: Battery Boxes (N.O.I.-Impregnated Fibre or Rubber)

Special Transportation Notes: None

=====

ENVIRONMENTAL/SAFETY REGULATIONS---SECTION IX

=====

Section 313 (Title III Superfund Amendment and Reauthorization Act):

This product does not contain any chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

=====

COMMENTS---SECTION X

=====

SALES INFORMATION (312) 450-7361

TECHNICAL INFORMATION (312) 450-7364

Mineral filler is a non-hazardous carbon type.

Signature: Michael R. Tirpak, Ph.D.

Title:

MATERIALS/PROD SAFETY ENGR

Original Date:

Sent to:

Date: \_\_\_\_\_

Revision Date: 10/27/88

Supersedes: 10/28/85

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, express or implied, and we assume no responsibility for any loss, damage, or expense, direct or consequential, arising out of their use.

# NL Chemicals MATERIAL SAFETY DATA SHEET

Day (609) 443-2407

MANUFACTURER'S NAME NL CHEMICALS / NL INDUSTRIES, INC. - ENVIRONMENTAL CONTROL DEPARTMENT		DATE 12/22/89
STREET ADDRESS P.O. BOX 1090, WYCOFF MILLS RD., HIGHTSTOWN, N.J. 08520		REASON FOR REVISION NEW
PRODUCT CLASS EBONITE - Hard Rubber	MANUFACTURER'S PRODUCT NO. None	TRADE NAME None
		<input type="checkbox"/> MIXTURE <input type="checkbox"/> CHEMICAL CAS # N/A

INGREDIENT	PERCENT BY WEIGHT	PPM	TLV	mg/m <sup>3</sup>	LEL %	VAPOR PRESSURE mm Hg @ 68°F
Product is hard rubber from washed reclaimed battery casings. May contain trace amount of lead.						
Subject to reporting requirements under SARA Title III, Section 3137 ( ) Yes (x) No						
Listed as a possible carcinogen: NTP (No), IARC (No), OSHA (No)						

BOILING RANGE  
Not Applicable

VAPOR DENSITY	EVAPORATION RATE	% VOLATILE BY VOLUME	WEIGHT PER GALLON	SPECIFIC GRAVITY
<input type="checkbox"/> HEAVIER <input checked="" type="checkbox"/> N/A <input type="checkbox"/> LIGHTER THAN AIR	<input type="checkbox"/> FASTER <input checked="" type="checkbox"/> N/A <input type="checkbox"/> SLOWER THAN ETHER	—	—	1.3

DOT CATEGORY N/A	FLASH POINT N/A	LEL N/A
---------------------	--------------------	------------

EXTINGUISHING MEDIA  
☐ WATER-FOG ☐ FOAM ☐ OTHER  
☐ CARBON DIOXIDE ☐ DRY CHEMICAL N/A

UNUSUAL FIRE AND EXPLOSION HAZARDS  
None

SPECIAL FIRE FIGHTING PROCEDURES  
None

STABILITY  
☐ UNSTABLE ☒ STABLE  
 CONDITIONS TO AVOID None

INCOMPATIBILITY  
 MATERIALS TO AVOID  
None

HAZARDOUS DECOMPOSITION PRODUCTS  
None

HAZARDOUS POLYMERIZATION  
☐ MAY OCCUR ☒ WILL NOT OCCUR  
 CONDITIONS TO AVOID None

COMPONENTS IN TSCA INVENTORY

Health 01, Flammability 01, Reactivity 01, Personal Protection  
 NFCA Hazardous Materials Identification System (HMIS)  
 HMIS (Canada)  
 Controlled Product  
 YES  
 NO  
 X

OTHER PRECAUTIONS  
 None

Normal precautions for nuisance dust should be provided.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Normal protection against foreign substances as needed - safety goggles.

PROTECTIVE EQUIPMENT  
 None

Provide as necessary.

VENTILATION

National Institute for Occupational Safety and Health.

Use of NIOSH approved dust respirator is recommended.

RESPIRATORY PROTECTION

Dispose in accordance with local, state and federal regulations.

WASTE DISPOSAL METHOD

Avoid prolonged inhalation of dust.

Normal precautions for nuisance dust should be observed in case of spills.

STAYS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Eyes: Normal washing to remove dust.  
 Inhalation: Remove to fresh air.

EMERGENCY AND FIRST AID PROCEDURES

Prolonged inhalation of dusts may result in irritation of the respiratory tract.

None Assigned  
 FIRST AID PROCEDURES



CORPORATE ENVIRONMENTAL SERVICES  
P.O. Box 1000, Wyckoff Mills Road  
Hightstown, New Jersey 08520

FAX: (609) 443-2446, Alternate: (609) 443-2433, Confirm: (609) 443-2436

## FAX TRANSMISSION



URGENT, DELIVERY IMMEDIATELY



CONFIRMATION REQUIRED

DATE: 12/22/89 FAX NO 303-799-0186 3 Pages (Incl. Cover)

To: Alistair Montgomery Phone/Ext: 303-790-1747

Location: Canonic Environmental Department: \_\_\_\_\_

From: Jay Young Phone/Ext: \_\_\_\_\_

Location: \_\_\_\_\_ Department: \_\_\_\_\_

Subject: \_\_\_\_\_

Message: We have taken the liberty of transferring your information to  
our form. Please review and comment.

Date Sent: \_\_\_\_\_ Time Sent: \_\_\_\_\_ By: \_\_\_\_\_

**A N A L Y T I C A L     R E P O R T**

**890909**

**FOR**

**Canonie Environmental**

**94 Inverness Terrace East  
Englewood, CO 80112**

**08/01/89**



APPENDIX C  
PLASTIC MARKETING DATA

# Canonie Environmental

Canonie Environmental Services Corp.  
24 Ingersoll Parkway  
Englewood, Colorado 80155  
Phone: (303) 730-1151  
Fax: (303) 730-1156  
88-099-05

December 19, 1989

*Dr. Michael Margolies*  
*Director of Environmental Affairs*

Mr. Aaron Zisman  
Kinbursky Bros. Supply Inc.  
1314 N. Lemon Street  
Anaheim, CA 92801

## Request for Expression of Interest

Dear Mr. Zisman:

Canonie Environmental Services Corp. (Canonie) is planning to recycle plastic from a battery processing site for a period of four years beginning in 1991. The plastic will amount to approximately 2,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives for shipping such material from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for reclaimed materials that require further processing. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your operation. May I ask that you return this letter by January 20, 1990.

Very truly yours,

*David L. Shuck*

David L. Shuck  
Project Supervisor

DLS/dls

The sample submitted by Canonie is ☒   
is not ☐ of interest to Kinbursky   
Bros. Supply Inc.

*Michael P. Margolies*  
Signature

*1-15-90*  
Date



JAN 17 1990

KINSBURSKY  
BROTHERS  
INC

Olga Erlich  
David Shuck  
Canonie Environmental Services Corp.  
94 Inverness Terrace East  
Suite 100  
Englewood, Colorado 80112

January 15, 1990

Dear Ms. Erlich:

It was a pleasure talking with you last week concerning plastic from the National Lead remediation project. As I told you we are involved in the recycling of lead acid batteries and are very experienced with this type of problem. In fact, our R&D work for the past year has been directed at remediation technology for battery smelting and recycling operations. This past year we submitted to USEPA a proposal for the technology transfer program (we are a finalist for the soil washing system) directed at site remediation of heavy metals.

We are very interested in this project and would appreciate the opportunity to participate. At some point, it would be helpful to run a full sample through our equipment to do a feasibility study. This would require a truck load or two in order to determine the most effective characteristics of the wash solution and optimum resident time for the given plastic. Recently, at our Canadian facility we washed and processed over 100,000 pounds of battery plastic, that had been on the ground for close to ten years. We would be able to process this material either here or on site. On site has the advantage of lowered transportation costs and perhaps reduces the liability of sending this material off site. We are also interested in the lead waste, as this is the primary product we recycle. If I can provide you with any further information please contact me. I look forward to hearing from you soon.

Sincerely,

  
Dr. Michael D. Margolis  
Director of Environmental Affairs

## REFUSALS

December 19, 1989

Canonie Environmental Services Corp.  
34 Inverness Terrace East  
Englewood, Colorado 80151

Phone 303 790 0407  
Fax 303 799 0135

88-099-05

Mr. Russel Brownier  
Pacific Resource Recycling Corp.  
1300 N. River Street  
Portland, OR 97227

Request for Expression of Interest

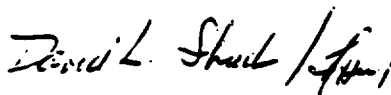
Dear Mr. Brownier:

Canonie Environmental Services Corp. (Canonie) is planning to recycle plastic from a battery processing site for a period of four years beginning in 1991. The plastic will amount to approximately 2,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives for shipping such material from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for reclaimed materials that require further processing. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your operation. May I ask that you return this letter by January 20, 1990.

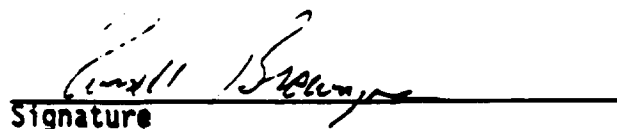
Very truly yours,



David L. Shuck  
Project Supervisor

DLS/dis

The sample submitted by Canonie is \_\_\_\_\_  
is not \_\_\_\_\_ of interest to Pacific  
Resource Recycling Corp.

  
Signature

Jan 2, 1990  
Date



## Pacific Resource Recycling, Inc.

1300A North River Street • Portland, Oregon 97227

(503) 284-9540 FAX (503) 284-9627

January 3, 1990

David L. Shuck  
Canonie Environmental Services Corporation  
94 Inverness Terrace East - Suite 100  
Englewood, Colorado 80112

Dear Mr. Shuck:

We have received your sample of plastic from battery processing. Unfortunately, we are unable to accept the material because it is much dirtier than the material we have been processing.

Pacific Resource Recycling is currently performing the same function. We have experience in setting up battery generation systems that work very well on this type of material. If you are interested, we could establish the same setup for Canonie Environmental.

This would put us in a position to market all lead mud, lead, and polypropylene battery chips for you. If this, or any part of it is of interest to your company, please let us know and we will begin the prephase work.

We look forward to working with you.

  
RUSSELL BROWNIER  
President

RB:pag

NO RESPONSE

# Canonie Environmental

December 18, 1989

Canonie Environmental Services Corp.  
94 Inverness Terrace East  
Englewood, Colorado 80151  
Phone 303 799 1647  
Fax 303 799 1648  
88-099-05

Mr. Russel Brownier  
Pacific Resource Recycling Corp.  
1300 N. River Street  
Portland, OR 97227

## Request for Expression of Interest

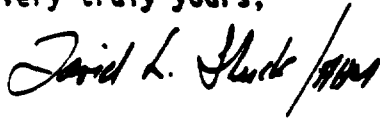
Dear Mr. Brownier:

Canonie Environmental Services Corp. (Canonie) is planning to recycle plastic from a battery processing site for a period of four years beginning in 1991. The plastic will amount to approximately 2,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives for shipping such material from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for reclaimed materials that require further processing. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your lead smelting operation. May I ask that you return this letter by January 20, 1990.

Very truly yours,



David L. Shuck  
Project Supervisor

The sample submitted by Canonie is \_\_\_\_\_  
is not \_\_\_\_\_ of interest to Pacific  
Resource Recycling Corp.

\_\_\_\_\_  
Signature

DLS/dis

\_\_\_\_\_  
Date

# Canonie Environmental

Canonie Environmental Services Corp.  
94 Inverness Terrace East  
Englewood, Colorado 80150

Phone: 303 730 1747  
Fax: 303 799 1166

88-099-05

December 18, 1989

Mr. Steve M. Biedel  
Environmental Pacific Corp.  
5285 S.W. Meadows Road, Suite 120  
Lake Oswego, OR 97035

## Request for Expression of Interest

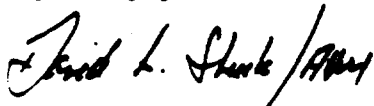
Dear Mr. Biedel:

Canonie Environmental Services Corp. (Canonie) is planning to recycle plastic from a battery processing site for a period of four years beginning in 1991. The plastic will amount to approximately 2,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives for shipping such material from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for reclaimed materials that require further processing. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

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Very truly yours,



David L. Shuck  
Project Supervisor

The sample submitted by Canonie is \_\_\_\_\_  
is not \_\_\_\_\_ of interest to  
Environmental Pacific Corp.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

DLS/dls

# Canonie Environmental

December 18, 1989

Canonie Environmental Services Corp.  
34 Inverness Terrace East  
Englewood, Colorado 80151  
Phone 303 790 0047  
Fax 303 790 0066  
88-099-05

Mr. Aaron Zisman  
Kinbursky Bros. Supply Inc.  
1314 N. Lemon Street  
Anaheim, CA 92801

## Request for Expression of Interest

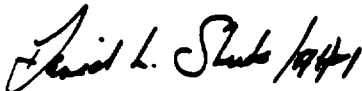
Dear Mr. Zisman:

Canonie Environmental Services Corp. (Canonie) is planning to recycle plastic from a battery processing site for a period of four years beginning in 1991. The plastic will amount to approximately 2,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives for shipping such material from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for reclaimed materials that require further processing. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

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Very truly yours,



David L. Shuck  
Project Supervisor

The sample submitted by Canonie is \_\_\_\_\_  
is not \_\_\_\_\_ of interest to Kinbursky  
Bros. Supply Inc.

\_\_\_\_\_  
Signature

DLS/dis

\_\_\_\_\_  
Date



APPENDIX D  
SHIPPING REGULATIONS

MEMO

TO: File

88-099-07

FROM: Grey Bogden 

October 31, 1989

NI Industries' Gould Site - Regulations  
Controlling Shipment of Pb Concentrates and  
Pb Concentrates Samples to Recyclable Facilities

Questions: Assigned to Grey Bogden for Response:

What regulations govern shipment of the Pb concentrates? Would Pb concentrates produced during the site cleanup have to be manifested?

- A. The controlling regulations for shipment of Pb concentrates and without a hazardous waste manifest follow.

In summary the following regulations accomplish the following:

1. Identifies the concentrates as a "solid waste" and a "hazardous waste" due to levels of lead in the concentrate (261.1).
2. Procedures for obtaining a variance from the classification of a hazardous solid waste since the concentrates are a recyclable material and further reclamation is required to completely recover the lead product (261.1, 260.30 and 260.31).
3. Lists regulations providing for exclusion from RCRA regulations hazardous wastes that are recycled (261.6, Subpart C, Recyclable Materials Used in a Manner Constituting Disposal and, Subpart G 266.80 Spent Lead and Batteries Being Reclaimed).
4. Conclusion: The above regulations governing use of recyclable materials exclude the shipment of concentrates under RCRA regulations Parts 262 through 266. A hazardous waste manifest is not required. Only compliance with DOT regulations is necessary.

5. Identifies concrete and asphalt associations for possible use of ebonite in road construction.

#### PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

Under Section 261.1, Purpose and Scope, Subpart A - General, defines the terms "solid waste" and "hazardous waste," identifies those wastes which are excluded from regulation, and establishes management requirements for hazardous waste which is recycled (emphasis supplied).

Since the Pb concentrates contain approximately 30 percent lead and are a soil-like material, the concentrates fit the definition of solid waste, Section 261.1. Section 261.1(a)(1) provides that a solid waste is any discarded material that is not excluded by Section 261.4(a), Materials Which are Not Solid Wastes, and that is not excluded by variances granted under Section 260.30, Variance From Classification as a Solid Waste, and Section 360.31, Standards and Criteria for Variance from Classification as a Solid Waste (emphasis supplied).

Therefore, the EPA suggested proceeding with the variances from classification as a solid waste.

#### 260.30 Variances from classification as a solid waste.

In accordance with the standards and criteria in Section 260.31 and the procedures in Section 260.33, the Regional Administrator may determine on a case-by-case basis that the following recycled materials are not solid wastes . . . :

- (c) Materials that have been reclaimed but must be reclaimed further before the materials are completely recovered. (Emphasis supplied)

#### 261.1 Purpose and scope.

(a) This part identifies those solid wastes which are subject to regulation as hazardous wastes under Parts 262 through 265, 268, and Parts 270, 271, and 124 of this chapter and which are subject to the notification requirements of Section 3010 of RCRA. In this part:

- (1) Subpart A defines the terms "solid waste" and "hazardous waste", identifies those wastes which are excluded

from regulation under Parts 262 through 266, 268, and 270 and establishes special management requirements for hazardous waste produced by conditionally exempt small quantity generators and hazardous waste which is recycled. (Emphasis supplied)

260.31 Standards and criteria for variances from classification as a solid waste.

(c) The Regional Administrator may grant requests for a variance from classifying as solid waste those materials that have been reclaimed but must be reclaimed further before recovery is completed if, after initial reclamation, the resulting material is commodity-like (even though it is not yet a commercial product, and has to be reclaimed further). This determination will be based on the following factors:

- (1) The degree of processing the material has undergone and the degree of further processing that is required;
- (2) The value of the material after it has been reclaimed;
- (3) The degree to which the reclaimed material is like an analogous raw material;
- (4) The extent to which an end market for the reclaimed material is guaranteed;
- (5) The extent to which the reclaimed material is handled to minimize loss;
- (6) Other relevant factors.

By obtaining the variance from classification of a solid waste, shipment of the Pb concentrates is excluded from regulation under the manifest requirements and other STD regulations.

Confirmation contact: Kent More, EPA, Washington, D.C.

Phone: (800) 424-9346

- B. Regulations governing shipments of concentrate samples from Hazen Research to recycling facilities.

The EPA Treatability Exclusion Regulations, the State of Colorado Treatability Regulations, and EPA regulations governing recyclable materials establish the following:

- (1) No manifesting is required. Compliance with DOT regulations necessary.
- (2) No weight limits for the samples are in effect.

Confirmation contacts: Dave Walz, Colorado Department of Health  
Phone: (303) 331-4819

Ann Kennedy, EPA  
Phone: (800) 424-9346

- C. What instructions should accompany samples regarding unused portions of the samples?

It is suggested that any unused portions of the samples be returned to Canonic for return to Hazen Research.

- D. Should Canonic provide Material Safety Data Sheets (MSDS) to recycling facilities?

Part 1910, Occupational Safety and Health Standards, Section 1910.1200, Hazard Communication, requires information concerning hazards of all chemicals be transmitted to employers and employees. OSHA 29 CFR 1910 is also an ARAR included in the Gould Site ROD.

Section 1910.1200, Communications (b) Scope and Application Section (5) provides:

This section does not apply to: (1) Any hazardous waste as such term is defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, when subject to regulations issued under that Act by the Environmental Protection Agency.

However, it is suggested Canonic submit an MSDS to those recyclable facilities who requested such information.

E. Contacts for possibility of recycling ebonite for use in asphalt and/or concrete?

(1) Asphalt

Contact: John Rugg, National Asphalt Producers Association,  
Maryland  
Phone: (301) 779-4880

Policy: Do not encourage use of recyclable materials, but in addition do not say no. Have experienced recycling asphalt reclaimed from roads, asphalt shingles, and tires.

Problem is meeting air emissions standards when placing recyclable materials into the "hot mix asphalt." The need to research the materials to be recycled from viewpoints of meeting the requirements of the Clean Air Act and performance of such materials when used in the asphalt is essential.

Regulations exist for controlling hazardous chemicals, but not for regulating metals. Basically, each state has its own criteria for establishing asphalt standards.

(2) Contact: Jim Dieque, American Concrete Institute, Michigan  
Phone: (313) 532-2600

Use of recyclable materials is based on results from testing and performance appraisal. No national standards exist. Currently, using fly ash. There is an increase in the use of slag in concrete. Each state establishes its own criteria. No national standards exist for materials. EPA leach tests would be required for any hazardous materials used in the concrete.

(3) Contact: Stan Goodwin, Portland Cement Association, Chicago  
Phone: (312) 966-6200

Portland Cement operates laboratory facilities to perform research on materials used in concrete. There are no specific national standards regarding materials used in concrete. In considering use of a material, need to conduct research regarding feasibility and economics of materials. Goodwin suggested contacting Mr. Ron Burg, Construction Technology Section, Portland Cement Association, (312) 965-7500. According to Goodwin, Burg would cooperate in performing any research work. Industry is currently using granulated blast furnace slag in concrete in some areas. Also using silica fume to improve permeability and strength of concrete.

Contact: Ron Burg, Portland Cement Association, Construction Technology Section  
Phone: (312) 965-7500

Burg provided the following information regarding use of their lab to perform lab tests on use of ebonite:

Schedule: Current work load backed up four to eight weeks.

Quantity of materials needed to perform the test: 500 to 1,000 pounds.

Cost: Would be a reasonable effort to perform tests for durability, strength, abrasiveness, and tests comparing performance of ebonite mixed concrete with regular concrete mix. Estimated cost: \$15,000

F. Outline of regulations controlling processing of recyclable materials.

Included in this memorandum to this file are the following regulations governing the regulatory procedure for recycling materials.

**PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE****261.6 Requirements for recyclable materials.**

(a)(1) Hazardous wastes that are recycled are subject to the requirements for generators, transporters, and storage facilities of paragraphs (b) and (c) of this section, except for the materials listed in paragraphs (a)(2) and (a)(3) of this section. Hazardous wastes that are recycled will be known as "recyclable materials."

(2) The following recyclable materials are not subject to the requirements of this section but are regulated under Subparts C through G of Part 266 of this chapter and all applicable provisions in Parts 270 and 124 of this chapter:

(i) Recyclable materials used in a manner constituting disposal (Subpart C);

(v) Spent lead-acid batteries that are being reclaimed. (Subpart G). (Emphasis supplied)

**PART 266 - STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES****Subpart C - Recyclable Materials Used in a Manner Constituting Disposal****266.20 Applicability.**

(a) The regulations of this subpart apply to recyclable materials that are applied to or placed on the land:

(b) Products produced for the general public's use that are used in a manner that constitutes disposal and that contain recyclable materials are not presently subject to regulation if the recyclable materials have undergone a chemical reaction in the course of producing the products so as to become inseparable by physical means and if such products meet the applicable treatment standards in Subpart D of Part 268 . . .

**Subpart G - Spent Lead-Acid Batteries Being Reclaimed****266.80 Applicability and requirements.**

(a) The regulations of this subpart apply to persons who reclaim spent lead-acid batteries that are recyclable materials ("spent batteries"). Persons who generate, transport,



October 31, 1989

or collect spent batteries, or who store spent batteries but do not reclaim them are not subject to regulation under Parts 262 through 266 or Part 270 or 124 of this chapter, and also are not subject to the requirements of Section 3010 of RCRA.  
(Emphasis supplied)

Confirmation contacts: Ann Kennedy, EPA

Phone: (800) 424-9346

GB/jb

cc: Wolf Kube  
Alistair Montgomery  
Dave Shuck

# Canonie

## TELEPHONE CALL RECORD

DATE 05/31/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME Olga Erlich TELEPHONE NO. 503/284-9540

TO Larry Browner OF Pacific Resource Recycling Corp  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Will be glad to buy plastic if it passes EPTox  
Shipping has to be pay by our company  
Need about 10 lbs sample to do analyses  
by themselves

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 11/29/89 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME \_\_\_\_\_ TELEPHONE NO. 503/284-9540

TO Ravel Browner OF Pacific Resource Recycl. Corp.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

11/29/89 3:30pm Left a message  
12/05/89 2:00pm Left a message

Ask to send him a sample of 5-10 lbs

Attn: Ravel Browner  
Pacific Resource Recycling Corp  
1300 N. River St.  
Portland, Oregon  
97227

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 12/28/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME Olga Slick TELEPHONE NO. 503/284-9540

TO \_\_\_\_\_ OF \_\_\_\_\_  
FROM Russel Browner OF Pacific Resource Recycling Corp.

Plastic chips are too dirty.  
They have cleaning system for washing battery.  
Would like to make a contract for using &  
designing this cleaning system for us  
Have also a market for lead fines  
Would like to know how much of lead fines  
we going to obtain in our process.  
He is going to send a sample of plastic chips  
obtained after processing through this cleaning  
system, so we can take a look at the  
clean material.

# Canonie

## TELEPHONE CALL RECORD

DATE 01/29/90 TIME \_\_\_\_\_ PROJECT NO. 88-099-07

NAME O. E. Eck TELEPHONE NO. 503/284-9540

TO Stan Rizer OF Pacific Resource Recycling Corp.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

If the washing system will <sup>work</sup> ~~for~~ with 1 ton/hour  
for plastic  
the price will be ~ \$ 350,000

if the flow will be 5t/hour it will cost ~ \$ 1,000,000  
Cost will be \$ 10-15,000 cheaper if we wouldn't need  
crusher (mills)

They have market for plastic & lead fines. If will have  
contract with them chips price 15¢ to 5-6¢/lb (vary on market)  
will have contract for one year profit 50.50 on the scale  
of chips price.

Worked with NL Gould site sometime in the early 80's  
plastic chips have to be processed through one more  
tank (they had problem at 80's with them).

Making contract for lead fines will require 10-15%  
of lead profit for the contract. will be able to do  
6 month contract. Lead mud prices \$150/ton on  
today's market. Depend a lot from the composition  
may end up paying ~~£~~ in order to <sup>somebody take</sup> ~~accept~~ that  
material.

Will contact at the end of the week with prices quote

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 02/27/90 TIME \_\_\_\_\_ PROJECT NO. 81-099-07  
NAME O. Erlich TELEPHONE NO. \_\_\_\_\_

TO Stan Kazar OF Environ Resource Recycling, Inc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

NL site might have possible problem with plastic because of styrene (kind of plastic) existence on the site. Quality of the material (plastic chips) depend on where exactly material is coming from (location on the site), as further deeper you go as more contamination, problems can occur.

Based on today market, and on how clean plastic is, also on what kind of plastic we will obtain we can get for it, 5-7¢/lb (on buying). Probably will pay us, but he is not going to do pricing now.

He will try to get writing quotation by 02/16/90

Joe Minchew. ~~is~~ worked on NL Gould site once before, can do consulting if it is necessary.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 05/31 TIME \_\_\_\_\_ PROJECT NO. 88-099-07

NAME Olga Elich TELEPHONE NO. 714/738-8516

TO Harold Ziseman OF Kinsbury Bros Supply Inc.

FROM \_\_\_\_\_ OF \_\_\_\_\_

- Will take plastic (but need a sample first)
- Can come to the site and take it
- Will pay ~ 13-14¢/lbs of clean material  
(price can go up & down depending on analysis)

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 7/29/14 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_

NAME \_\_\_\_\_ TELEPHONE NO. 714/738-8516

TO Erion Zimmman OF Kimberly Bros Supply Inc

FROM \_\_\_\_\_ OF \_\_\_\_\_

4:30pm left a message

call back Need a sample 5/16 plastic

Sent to: BARON Zimmman  
1314 N. Lemon St  
Anaheim, CA 92801

will tell what market price is (current  
market value), if material is close  
enough. ~~on~~ Turn around approx. 2 weeks

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.



# Canonie

## TELEPHONE CALL RECORD

DATE 4/16/90 TIME \_\_\_\_\_ PROJECT NO. 88-049-07  
NAME C. Erlich TELEPHONE NO. \_\_\_\_\_

TO \_\_\_\_\_ OF \_\_\_\_\_

FROM Baron Zisman OF Kinsbury Bros Supply Inc

Plastic presents a lot of problems but not for them, because they have experience in cleaning it up. It is different from regular batteries plastic. In regular case lead washes right off from the battery. But lead contaminated plastic is very difficult to clean (they were dealing with this problem lately). KBS is a recycling company for batteries. They submitted to EPA to be a subcontractor in batteries site clean-up.

Have experience in cleaning plastic from old battery site in Canada. For future they will need 1 truck load of plastic sample to try in their process for the pricing process & timing.

Ask to send him a sample of 1 lbs lead fines.

# Canonie

## TELEPHONE CALL RECORD

DATE 5/23/90 TIME 12:50pm PROJECT NO. 88-099-07

NAME \_\_\_\_\_ TELEPHONE NO. 714/738-8516

TO Mike E. Margolies OF Kimburky Brothers Inc.

FROM \_\_\_\_\_ OF \_\_\_\_\_

will try to determine cost of the plastic process  
based on fixed value of polypropylene as well  
as on-site & off-site should have results on  
cost estimate about wednext week, 05/31/90 Also  
working now on the lead fines sample in order  
to determine if they interested or not.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 01/29/90 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME D. Erlich TELEPHONE NO. 714/738-8516

TO Mike Margolies OF Kinsbury Bros Inc  
FROM \_\_\_\_\_ OF \_\_\_\_\_

If plastic value on the market 5¢/lbs  
we might end up paying to someone in order  
to take it.

If plastic value on the market 15¢/lbs  
we might have some profit.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 2/15/90 TIME \_\_\_\_\_ PROJECT NO. 89-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 714/738-9516

TO Mike Margolin OF Kushnirsky Bros Inc  
FROM D. Erlich OF Canonie

Send a letter with proposed process and  
cost out to us (Canonie)

In order to accept plastic chips will  
charge us 10-15¢/lbs based on the assumption  
that 75% of our plastic is polypropylene and  
its recoverable material. Also that plastic  
is not too much contaminated w/ b. b. b. b. b.  
addition. This charge will not cover freight

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 5/31/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME Olga Erlich TELEPHONE NO. 213/262-1101

TO Martin Groh OF GNB Inc  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*will pay approx. 25¢/lb for delivered plastic  
But need a sample 5-10 lbs plastic for exact  
cost estimate*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 11/27/84 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME \_\_\_\_\_ TELEPHONE NO. 215/378-0540

TO Walter Low Magdilis OF Exide

FROM \_\_\_\_\_ OF \_\_\_\_\_

There plastic plant in PA. Plastic is not very  
high value material somewhere in mid trees.  
Full load of high quality plastic from  
Oregon to PA transportation cost approx 5-10 ¢/lb  
Plastic worth approx. 15-16 ¢/lbs on market

Suggest to call GNB.  
He doesn't need a sample of plastic to look  
at.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 05/31/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME Olga Elnik TELEPHONE NO. 503/226-7331

TO Steve Biedel OF Environmental Pacific

FROM \_\_\_\_\_ OF \_\_\_\_\_

- Will take hazardous waste for recycling
- Will send profile to be filled & info about analyses. When this approved, material & management agreement to be signed
- Don't know how much they will give us or charge <sup>us</sup> for haz. waste (Very approx. 10¢/lb, but this price can go up & down depending on analysis)

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 1/21/89 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME \_\_\_\_\_ TELEPHONE NO. 503/226-7331

TO Steve M. Bredel OF Environmental Pacific Corp.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Need a sample of concrete, plastic, sludge.  
Each sample has to be 5 lbs.

Send to: Steve M. Bredel  
Environmental Pacific Corp  
5285 SW Meadows Rd., Suite 120  
Lake Oswego, OR  
97035

Have access to different companies; can give pricing

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.



# Canonie

## TELEPHONE CALL RECORD

DATE 02/19/90 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 503/697-1688

TO D Erlich OF Canonie  
FROM Steve Beidell OF Environmental Pacific Corp

Interested in plastic chips.  
Thinks they will charge us 1-2¢/lb of plastic  
on delivery (based on today market value)

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 12/05/89 TIME \_\_\_\_\_ PROJECT NO. 89-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 1-800/533-9222

TO Jennifer OF Deer Polymer  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Would be interested in plastic if it will be  
mold/thermo plastic material. Ask to call her  
back when will know what plastic ~~is~~ ours is  
May have some suggestions about it.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 4/1/70 TIME \_\_\_\_\_ PROJECT NO. 89-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 1-800-33-9222

TO Nancy OF Deer Polymer  
FROM P. Erlich OF Canonie

Plastic

- Thermosets  
(can not remake.  
any products)
- Thermoplastic  
(can be remelted  
and another product  
can be produced)

Deer Polymer  
3410 Jerry Blvd  
San - Francisco, CA  
94118

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

PLASTIC

# Canonie

## TELEPHONE CALL RECORD

DATE 9/15/84 TIME \_\_\_\_\_ PROJECT NO. 88-C99-C7  
NAME \_\_\_\_\_ TELEPHONE NO. 303/791-1030

TO Gen Padilla OF WRC Inc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Received a sample of +10 mesh cleaned about  
Asked about MSD Sheet for this material in  
order to marketing it need to have it.

His address.

WRC Inc.  
7623 N. Laramie Ave.  
Louisville, Colo  
80131

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 2/10/90 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME Elga. Erlich TELEPHONE NO. 800/91-1030

TO Ken Padellia OF WEC Inc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Notify him about MSE's submission  
has to introduce MSE's & describe material (submitted)  
company They have to identify if material compatible  
to their process or not If compatible will take about  
2 months to run tests and evaluate material  
If not compatible Company has to have R&D factor  
which may take ~ 6 months.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/27/84 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 514/340-1706  
Ebonite as Fuel

TO Peter Carter OF Wisdom Corp  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Referred by Albert La Point - Arcia Engineering  
(and ebonite as a fuel)

Used to have plant for cleaning up batteries.  
Cleaned ebonite tried to sell to the mining  
companies to be used as a fuel Didn't have any  
success with it.

Suggests to call Lafarge, Canada or any  
large cement companies may be they will be  
able to ~~test~~ ~~test~~ test <sup>ebonite as</sup> fuel-burning  
Didn't do any tests on burning ebonite  
by himself

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10-30-89 TIME 10:40 PROJECT NO. EB-099-07  
NAME NL TELEPHONE NO. 312/966-6200

Examine 25 Fuel in Cement plants

TO Gene Gabe OF Portland Cement Association, Skokie, IL  
FROM W. H. Kube OF Canonie

Name and location of cement plants in Portland, Oregon area ?

One plant in eastern Oregon - ASHGROVE; Headquarter in Kansas.

Location - Durky

Mgr : Jim Post 503/224-5747

2 plants in Seattle : LEHI ; Headquarter is Allentown, PA 215/776-2600  
IDEAL ; Headquarter is Denver, CO.

1 plant in northern California ; Calaveras, owned by CBR  
of San Mateo 415/572-8900

1 plant at US/Canada border : LAFORGE

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.



# Canonie

## TELEPHONE CALL RECORD

DATE 11-1-89 TIME 3:30 PROJECT NO. BB-094-07

NAME NL TELEPHONE NO. 503/491-9356

### Ebomite as Fuel

TO Tom Kingston OF Portland General Electric

FROM W. Kube OF Canonie

The Boardman Plant is the only coal fired plant in Oregon having a capacity of 530 MW. This plant is generating electricity for peak demand periods. It operated in Feb and March of 1989 and is shut in right now. Should be running next year. The plant burns 7,000 tons of coal per day. Hydropplants generate most of the electricity in Oregon. There is one nuclear plant.

The idea of using ebomite as fuel was turned down before. Economics were not good enough to overcome environmental problems. Tom Kingston suggests we talk to Mr. Loren Mayer, Engineering Dept of PGE : (503) 464-8169.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE

# Canonie

## TELEPHONE CALL RECORD

DATE 11-7-89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME N'L TELEPHONE NO. (503) 464-8169

Fluorite as Fuel

TO Loren Mayer OF PGE  
FROM W. Kube OF Canonie

Would PGE consider burning fluoroite in power plant?

The Boardman plant is located 170 mi from Portland and is seldom in operation. There is another coal fired plant in Centralia, WA, owned by Pacific Power and Light which might have problem with fluoroite because of its sulfur content says, sulfur content no problem for PGE but it might pose a political problem rather than a technical problem. Must review technical data. "If lead is not causing a problem, we could burn it." Mayer suggests to involve EPA and DEQ and have the agencies support of this plan. (Ogden-Martin might have data on fate of Pb in municipal waste burner).

Send follow-up letter to Loren Mayer

Portland General Electric

121 SW Salmon St.

Portland, Oregon 97204

# Canonie

## TELEPHONE CALL RECORD

DATE 2-16-90 TIME 9:30 a PROJECT NO. 88-099-07

NAME NL TELEPHONE NO. (503) 464-8168

*Regarding use of ebouite as fuel.*

TO W. H. Kube OF Canonie

FROM Val Bistriceano OF PGE (Pacific General Electric)

*If Canonie or the Canonie client is willing to secure the necessary permit(s) and the State of Oregon requests that ebouite be burned at Boardman, PGE would accomodate the combustion of ebouite. The material would need to be mixed thoroughly with the coal containing 0.5% S<sub>2</sub> only. The maximum allowed Pb emission is 0.6 tons/year for the plant. A higher lead emission would trigger a permit review. Consideration must also be given to Pb remaining in ash from which it might be leached when landfilled.*

*Val is supervisor of the Mechanical Engineering Department.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE

# Canonie

## TELEPHONE CALL RECORD

DATE 2-16-90 TIME 3:15 PROJECT NO. 88-099-07

NAME NL TELEPHONE NO. 503/464-8168

TO Val Bistriceano OF PGE

FROM W. H. Kube OF Canonie

Q.. If Canonie would secure the necessary permits and state of Oregon approval for burning ebouite, would PGE take it at the Boardman plant without charge?

A.: "Not authorized to make any commitments but I think so, unless there are additional permit-related costs."

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 08/07/89 TIME \_\_\_\_\_ PROJECT NO. PP-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 205/699-6171

Ebonite 25 Fuel

TO Robert Wilson OF Interstate lead  
FROM WHK OF Canonie

Ebonite from the batteries on site stabilization  
and burial.

Another option: cement tile operator might  
use ebonite as a fuel. Burns very well

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10-30-79 TIME 8:40 PROJECT NO. 88-099-07

NAME NL TELEPHONE NO. 1-482-5600

*Ebonite as Fuel*

TO Roy Stienmier OF Ideal Basic Industries

FROM W. Kube OF Can.

*Company involved in battery recycling site cleanup. Will generate 10,000 tons of non-toxic hard rubber per year. Is IDEAL interested to use ebonite as fuel in cement plant?*

*Answer: The Seattle cement plant has been burning battery casings for some time. No reports to the bughouse. Man to talk to is Ron Wallace, Plant Manager (206) 937-8025.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10-30-89 TIME 9:45 PROJECT NO. 88-099-07  
NAME N/L TELEPHONE NO. 206/937-8025

*Ebonite as fuel*

TO Ron Wallace OF IDEAL  
FROM W H Kube OF Canonie

*Several years ago Ideal used battery casings from Harbor Island site as fuel in Seattle cement plant. Nylon cards presented a problem. The material was ground up, mixed with coal and fired. Had permit to use it as a fuel. No problems with lead he is aware of.*

*Plant uses 100,000 tons of coal per year.*

*Sent 540 lb. ebonite sample for trial test.*

# Canonie

## TELEPHONE CALL RECORD

DATE 11-15-89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME N/L TELEPHONE NO. 206/937-8025

*Ebonite as Fuel*

TO Ron Wallace OF IDEAL, Seattle  
FROM W.H. Kube OF \_\_\_\_\_

*Follow-up after shipment of sample.*

*Wallace: We wouldn't have any trouble running ebonite through our coal mill. We could use the material; when can we have it?*

*W.H.K.: Could we do a test burn to determine where the lead is going?*

*Wallace: Contact Dr. Greg Miller, IDEAL Research Lab in Fort Collins at 492-5600. Can also talk to Doug Sweeney.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE\_\_



# Canonie

## TELEPHONE CALL RECORD

DATE 11-21-89 TIME 3:20 PROJECT NO. 88-099-07  
NAME NL TELEPHONE NO. 206/937-8025  
Ebonite as fuel

TO Ron Wallace OF IDEAL  
FROM W. Kube OF Canonie

*Mr. Wallace on vacation til Monday after Thanksgiving.*

*12-4-89*

*Reached Ron Wallace and requested that he writes letter to Canonie confirming interest in using ebonite as cement plant fuel.*

*Mr. Wallace said he would do this.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 2-15-90 TIME 10:00 PROJECT NO. 88-099-07  
NAME N'L TELEPHONE NO. 206/937-8025

*Ebonite as Fuel*

TO W. H. Kube OF Canonie  
FROM Mike Depew OF Ideal, Seattle

Ron Wallace is out of the office for an extended period of time following surgery. Mike Depew is in charge and called to say:

1. Ideal cement company would not be willing to pay for the ebonite.
2. Another 10-lb. ebonite sample is required for testing.

When asked whether he would confirm IDEAL'S interest in writing, he said he would promptly return the expression of interest questionnaire to me.

# Canonie

## TELEPHONE CALL RECORD

DATE 08/07/59 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 215/378-0540

*Ebonite*

TO Louis Magditz OF Exide  
FROM WKK OF Canonie

*Richardson Battery Parts Div (WITCO) will  
make ebonite.*

*Ebonite contains:*

- 10% synthetic rubber*
- 10% oil*
- 5% sulfur ( $S_2$ )*
- 10% lime*
- 65% coal dust*

*Ash after burning contains 10%  $S_2$*

*Richardson Battery Parts Div (WITCO Corp.)*

*812/626-8900*

# Canonie

## TELEPHONE CALL RECORD

DATE 10-26-87 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_

NAME \_\_\_\_\_ TELEPHONE NO. 329-1785

Ebonite as Fuel

TO Dave Muggli OF Colorado Public Service

FROM UHK OF \_\_\_\_\_

Could ebonite be burnt as fuel in Power Plant?

Coal burnt in Colo is ground to - 200 mesh. Fineness has impact on burn-out rate. Coal cost in Colo = \$15-30/ton.  
40,000 t ebonite = ~ \$800,000 value.

Power 500 MW Plant uses 200 tons per hour of coal.

equal to  $1.75 \times 10^6$  tons per year. 3% Sulfur is high.  
Would require plant with  $SO_2$  removal equipment.

Most probably going into flyash. Two types of ash generated  
furnace - clinker - bottom ash  
fly ash - fine dust

Literature: Journal of Air Pollution Control

Combustion Engineering: Combustion

Babcock & Wilcox: Steam, Its Generation and Use

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/30/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME N/L TELEPHONE NO. 503/224-5747

*Ebonite as Fuel*

TO Jim Post OF Ashgrove Cement Co.  
FROM W H K OF Canonie

*Understand that Ashgrove has cement plant in Durky, Ore.  
Would you consider using non-toxic hard rubber (ebonite)  
as a fuel?*

*Fuel can't have more than 1% S<sub>2</sub> in Oregon. Durky is  
located 300 mi east of Portland, must ship by rail to  
keep costs down. For testing would require 1 gal sample.*

*Did not send sample because of 300 mi distance to Durky  
versus 170 mi distance to Seattle and Boardman.  
Contact could be pursued if everything else fails.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 09/27/84 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 307/721-2200

TO J. Clair Peterson OF Western Research Institute  
FROM C. E. Slub OF Canonie

- Have to look at physical properties of ebouite
- Suggest to start with the following tests:
  1. mix asphalt (paving) and ebouite
  2. heat mixture to 250°C
  3. note if ebouite dissolves in asphalt. not.
- If dissolves can be used as filler possibly. But not optimistic - asphalt is organic material. Rubber can be used or rubber material (but has to have more rubber %)
- If not dissolves can be used as a mixture - should have very strong mechanical properties. ~~Can~~ Can not say exactly about this. Recommend talk to John Eprie, University of Nevada, Civil Engineering Dept.
- If something will work the only way to go is to local market. A lot of sneaky salesman in the local market, and a lot of regulations. Doesn't know where to get this regulations.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/31/84 TIME \_\_\_\_\_ PROJECT NO. FP-C99-C7  
NAME \_\_\_\_\_ TELEPHONE NO. 301/752-3500

TO Merry Nelson OF U.S. Track & Tennis Court Bldg, A.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Call (For) Ronald Smith 406/245-5802  
for Eugene Smith 528/347-5184

10/02/84  
Call: Rick Frankhouse 301/739-3077  
Chairman of tennis division

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 12/22/84 TIME \_\_\_\_\_ PROJECT NO. 88-099-C7  
NAME \_\_\_\_\_ TELEPHONE NO. 406/245-5202

TO (Gen) Ronald Smith OF President of US Track & Tennis  
Great Britain Association  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Most of recreational products were reformulated to get rid of asbestos & lead in it. He doesn't know formulations & limits by himself suggests to call largest tennis courts manufacturers:

1. California products - 800/225-1141  
Art Tucker

2. Wikel Manufacturers - 800/537-6100  
Al Harp

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.



# Canonie

## TELEPHONE CALL RECORD

DATE 11/12/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 201/739-2077

TO Fick Funkhouser OF US Track & Tennis Court Bldg.,  
Assoc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*left a message*

*11/12/89 going to the meeting with US Track & TC Bldg. will talk  
with them about it May be will be able to  
help - answer in a week or so*

*I should call him back 11/16/89*

*11/16/89 Doesn't know about any regulations*

# Canonie

## TELEPHONE CALL RECORD

DATE 01/22/90 TIME \_\_\_\_\_ PROJECT NO. 18 C99-07  
NAME \_\_\_\_\_ TELEPHONE NO. 303/331-4850

TO D. Erlich OF Canonie  
FROM Roger Schimmel OF State Dept. of Health

He not see any limitations for about use in  
recreational asphalt, as long as it meets EPA  
criteria

Send a copy of letter to him

FAX # 303/322-9076

asking about written response

# Canonie

## TELEPHONE CALL RECORD

DATE 11/03/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 303/331-4830

TO Roger Schimmel OF State Health Dept. (Hwy. Materials  
& Waste Management Division)  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Do not see any limitations for the concrete use in  
recreational asphalt  
as long as it meets criteria for EP Tox.*

*4210 E 11 Av Room 351  
Denver Co 80220*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 09/26/14 TIME \_\_\_\_\_ PROJECT NO. 28-C99-C7  
NAME \_\_\_\_\_ TELEPHONE NO. 509/484-1758

TO Robert L. Running OF Petroleum Service Inc.  
FROM O. Erlich OF Canonie

- Thinks that ebonte cannot be used as a direct additive to asphalt.
- Someone tried to solve stripping problem by adding hydrating lime
- Worth to try if cost of ebonte will be not more than a cost of rock on a volume basis.
- Able to run the tests, recommends to start from viscosity (3 tests) and penetration (3 tests) test. Cost in his laboratory - \$240.00
- For this tests need approx 1 quart to 1 gallon of -325 mesh to -200 mesh material
- Turn around one week (max)
- After the results will talk further

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 4/27/84 TIME \_\_\_\_\_ PROJECT NO. 89-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 509/484-1758

TO Kent Anderson OF Petroleum Service Inc.  
FROM O. Erlich OF Canonie

- There are two different mix designs.
  - ② cold mix - slurry seal treatment emulsion blend
  - ③ hot mix - asphalt cement
- Suggest to test concrete by stripping test ASTM E-3625 (quick field test)  
To run this test will need 2 lbs of material and asphalt AR-4000 or AC-10 (1 quart)  
Cost \$30.00 Turn around 1-2 days.
- Colo. Dept. of transportation (every state have its own) can supply us with complete test method to evaluate hot mix (this is design procedure.)
- After this test (above) will go further depending on results.
- Each state have its own AR-4000 or AC-10 asphalt.
- Robert Krumm is person to talk about cold mix design

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE...

# Canonie

## TELEPHONE CALL RECORD

DATE \_\_\_\_\_ TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME C. Erlich TELEPHONE NO. 323/457-4833

TO Jeffrey Thompson OF Park & Recreation City of Denver  
FROM \_\_\_\_\_ OF \_\_\_\_\_

We approx 15,000 t/year of asphalt in making  
trails in Denver

Usually order asphalt from City Plant (284-647).  
In M.C. High Stadium used hot mix:  
gravel, sand, fly ash addition, heat to 430° and  
out & then add rubber by hand - C-6 mix

# Canonie

## TELEPHONE CALL RECORD

DATE 1-25-87 TIME 15:05 PROJECT NO. 99-094-07  
NAME NL TELEPHONE NO. 503/588-2430  
Ebonite 25 Aggregate in Concrete

TO Dick Angstrom, Director OF Oregon Concrete and Aggregate Association  
FROM WHK OF Canonie

The annual consumption of aggregate in 3 counties of the Portland area amounts to 15-20 million tons per year. The consumption increased 400% over a period of ten years. The three counties are: Multnomah, Washington and Clackamas.

This message was relayed by Rebecca, Mr. Angstrom's secretary.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/21/89 TIME \_\_\_\_\_ PROJECT NO. 81-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 301/779-4880

TO Emy Hummel OF Dist. C Asphalt Pavement Area  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Asphalt pavement can be recycled. If you  
put any additive to asphalt it is not recyclable.  
Call U.S. Truck & Tennis Court Builders Association.  
maybe they can help.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE..



# Canonie

## TELEPHONE CALL RECORD

DATE 4/28/89 TIME \_\_\_\_\_ PROJECT NO. 88-094-07  
NAME \_\_\_\_\_ TELEPHONE NO. 303/757-9724

TO Dick Hines OF Highway Dept. of Colo  
FROM D. Erlich OF Canonie

- Going to send test method to evaluate hot mix design
- By doing resistance test they looking for durability increase. Mix should contain 5, 5.5, 6.0, 6.5% (or similar values, this is an example only) asphalt. If this is not working, aggregate not durable and in this case they adding liquid-ion strip or hydrated lime to the asphalt to make it more durable.
- Every state will use Lettman test as evaluation for hot mix design.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 11/13/89 TIME \_\_\_\_\_ PROJECT NO. PR-049-07  
NAME \_\_\_\_\_ TELEPHONE NO. 323/757-4602

TO Rick Delacastro OF Calo Asphalt Producers Assoc  
FROM \_\_\_\_\_ OF \_\_\_\_\_

- Rubber as additive to asphalt gives better quality, but they have smoking problem all the time.  
Best way to go will be to find air quality limitations.
- EPA have sections on "operation hot plant emission standard for asphalt."
- They heat their mix to 51° F and it starts to smell. Temperature to make asphalt 310° F

# Canonie

## TELEPHONE CALL RECORD

DATE \_\_\_\_\_ TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O. Erlich TELEPHONE NO. 303/458-4812

TO Rod Wiberg OF City of Denver Park & Recreation  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Rod Wiberg - suggests to call Neil Sperandio. Doesn't know about any specifications on Recreational Asphalt. Concrete tennis courts has been used to his knowledge. Asphalt from the asphalt plant has been used for the walking trails.

Jersey Terryson - 303/458-4833 Have standard for rubber additive asphalt used it a long time ago for Mile High Stadium (tire shredding add to asphalt)

John DeLave - specialist on tennis courts. Uses 4" compacted asphalt mainly from crushed gravel, on the top goes asphalt and then special coating. Have not been use this for a while, because usually put concrete tennis courts.

Neil Sperandio - suggest to give him specifications for concrete and he will put it in circulation for Health Dept with written response.

# Canonie

## TELEPHONE CALL RECORD

DATE Sep, 1989 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME DL TELEPHONE NO. (602) 829-0448

*Ebonite in Asphalt*

TO Bob Campbell OF Asphalt Institute, Tempe, AZ  
201 E Southern Ave, Suite 104  
FROM W.H. Kube OF Canonie

Q: Can ebonite be used in asphalt?

A: Has never been done to his knowledge.

To determine feasibility, must do experimental work.

Q: What kinds of tests should be done?

A: The asphalt temperature is 275-325°F and anywhere from 250-325°F when aggregate is added.

Most basic test would involve heating of ebonite to 300°F and to see what happens. If material is stable, it may be used as an aggregate.

Suggests we get in touch with Bud Brakey of Asphalt Institute in Jvr to determine who can do tests for us locally.

# Canonie

## TELEPHONE CALL RECORD

DATE 9/18/89 TIME \_\_\_\_\_ PROJECT NO. 28-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 303/753-1014

TO Bud Brakey OF Asphalt Institute  
FROM O. Erlich OF Canonie

Suggest two types of tests:

- ① "wet" asphalt - cement (used in paving)  
powder ebomite should be used.  
Consistency should be checked & compared to  
"wet" asphalt.  
recover asphalt after the test and see the  
differences if any additive is remain in asphalt.
- ② additive (ebomite) in different quantities  
- mix design compare to "wet" asphalt (may be 3mm)  
- do evaluation of mixes (compressive strength & so on)

Call:  
- Western Research, Institute (WV, Lacimice)  
J. Clair Peterson 307/721-2300  
- Robert L. Dunning, Petroleum Science Inc.  
509/489-1758

# Canonie

## TELEPHONE CALL RECORD

DATE 10/20/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 602/829-0448

TO Bob Campbell OF Asphalt Institute  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Has publication: Asphalt pavement for  
athletic & recreational uses - IS-147  
Can pick it up in Denver office

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE \_\_\_\_\_ TIME \_\_\_\_\_ PROJECT NO. SP-099-07  
NAME D. Erlich TELEPHONE NO. \_\_\_\_\_

TO Bud Brally OF Asphalt Institute (Denver)  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Suggests to call State Architects Assoc. (Landscaping)  
Calls asphalt for tennis court-recreational  
asphalt*

*Call manufacture of asphalt emulsion  
Cabitec 296-1575 may be they can help*

*Call Nat'l Asphalt Pavement Assoc  
301/779-4880*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 09/27/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 312/626-8900

WITCO Corp.

TO Mike Tiepak OF Richardson Battery Parts Division  
FROM O. Erlich OF Canonie

- Do not produce ebonite any more. Produce "hard rubber", but it has different composition than ebonite. Ebonite had ~25%  $S_2$  (sulfur). Material which they produce has 2% sulfur ( $S_2$ ).
  - Product they produce called "mineral fill". They tried to find market for recycling but nobody wants it. Only way he sees it to burn it, but nobody wants it because of  $S_2$  content. Possibly, if get rid of  $S_2$  somehow then it can be used as a fuel.
- Never looked at an addition to asphalt.  
Will send MSDS sheet for the "mineral fill".



# Canonie

## TELEPHONE CALL RECORD

DATE 10/19/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME NL TELEPHONE NO. 714/843-5798  
*Ebonite uses, General*

TO David La Point OF Vercor, Hermosa Beach, CA  
FROM C.E OF Canonie

*Have been successful molding 2" diameter rods from ebonite. Because of residual lead content must come up with some market where lead will not be a problem.*

*Did not find a market for the product.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 08/07/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07

NAME \_\_\_\_\_ TELEPHONE NO. 504/775-3040

TO Glen Hase OF Schuykill Metals Corp

FROM WHK OF Canonie

*Ebonite is insoluble*

*Contains silicate,  $CaO$ ,  $S_2$*

*Has 14,000 BTU/lbs can be burnt.*

*May be can use in asphalt*

*Cannot cast it, can be used as plastic parts filler.*

*Another option to bury it.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/13/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 213/318-2554

### Possible uses of ebomite

TO Albert La Point OF Arca Engineering  
FROM O.E. OF Canonie

But several things to recycle rubber. The cheapest solution is to throw it away.

Tried to grind ebomite and combined it with polypropylene chips to make molds of thick wall pipe, pellets, fence posts. Holding tests were done by Verrecorp of Hermosa Beach, CA (owned by Arca Engineering).

Contact: David LaPoint 714/843-5798

Tried to burn it but amount of ash is high.

Contact: Peter Carter, Wisdom Corp. 514/340-1706

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

EBONITE

# Canonie

## TELEPHONE CALL RECORD

51 ✓

DATE 10/26/59 TIME 11:35 PROJECT NO. 58-099-07  
NAME NL TELEPHONE NO. 800/438-5052

TO Stan Tallman OF Willard Lead Products Company  
FROM WHK OF \_\_\_\_\_

*Got out of smelting business 6 years ago.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 11/29/89 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME P. Erlich TELEPHONE NO. 313/491-4700

TO Mr. <sup>Pick</sup> Walker OF Walker Industries  
FROM \_\_\_\_\_ OF \_\_\_\_\_

10:40 left message

Give him analyses on sludge. He doesn't think it is possible to process it. Have access to some overseas companies will contact them and get back with us.

12/30

Call back. He called some companies overseas & in U.S. Found companies in far east of US & in Europe who would be interested to look at this sludge. It is not economical to process this material today. Today's value on lead is 10-12¢. unless Pb price will go to 60¢.

Send sample to Mr. Walker

Walker Industries  
14300 Ilene St. Detroit Michigan  
48238

# Canonie

## TELEPHONE CALL RECORD

DATE 6/23/ TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME Olga Eliuk TELEPHONE NO. 313/491-4780

TO Rick Walker OF Walker Industries  
FROM \_\_\_\_\_ OF \_\_\_\_\_

~~Did not see~~ Have not done on this sample  
anything yet. Going to call this week  
overseas and see if they interested or not  
Will call back at the end of this week.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

Canonie

FINES

TELEPHONE  
CALL  
RECORD

DATE 01/20/90 TIME 10:15a- PROJECT NO. M-099-07  
NAME O. Erlich TELEPHONE NO. 313/491-4700

TO Dick Walker OF Walker Industries  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Tried to find a place for lead fines. Called one place - they don't want a sample, feel that the cost of bringing this material over will be tremendous. He will try to contact with somebody else but don't think it will be of any interest to them.



# Canonie

## TELEPHONE CALL RECORD

10/22/89  
10/26/89

59

DATE 10/25/89 TIME 10-11-89 PROJECT NO. 88-099-07  
NAME O. Erlich TELEPHONE NO. 216/271-1480

2

TO M. S. S. S. S. OF Victory White Metal Company  
FROM \_\_\_\_\_ OF \_\_\_\_\_

left a message

in another call,

some for the day 11:30 am.

just arrived in the contaminated judge  
should have to clean it.

# Canonie

## TELEPHONE CALL RECORD

DATE 7/11/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 202/634-1083

TO Bill Woodbury OF U.S. Bureau of Mines  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Reference EPA Survey of Battery Chip Recycling  
Commercial vendors, Attachment A  
Will send list of secondary lead smelters  
Received on 07/11/89

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O. Erlich TELEPHONE NO. 312/733-6700

TO William F. Revotti OF United American Metals  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Generate dross Not interested in recycling products.  
Quantity is too large for their facility  
Call Three Sources Alloys & Metals in FL  
Richard Roles 407/790-7200

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

TO:

Olga Erlich  
Confine Communication

FROM:

Cherie Cile  
Rolla Research Center, FTS 277-0981

No. of pages to follow: One

# Canonie

## TELEPHONE CALL RECORD

DATE 10/07/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. \_\_\_\_\_

TO E. Cole OF US Bureau of Mines  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Some of the listed companies are not lead smelters (Comitco is copper smelter). The list he has from the report with map of the locations for lead smelters (no names) approx. two years old. Going to FAX this map. He knows only several secondary lead smelters RSR in TN, AC and Shugkill. Heard that there are only 17 secondary lead smelters. He does not know exactly their names. If he will get their names he is going to send a list to us.

Primary lead smelters: ASARCO  
Glover, Missouri  
East Helena, Montana  
Omaha, Nebraska  
El Paso, TX.  
Doe-Ron Co Brink, Missouri

# Canonie

## TELEPHONE CALL RECORD

DATE 11/29/89 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME O. Erlich TELEPHONE NO. 303/792-5801

TO \_\_\_\_\_ OF Tolltruck International Ltd

FROM \_\_\_\_\_ OF \_\_\_\_\_

*Design equipment for refineries & smelters.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME D. Erlich TELEPHONE NO. 512/623-3131

TO Steve Rubinski OF Standard Industries

FROM \_\_\_\_\_ OF \_\_\_\_\_

*Not interested in the Pb contaminated material  
if it's less than 50% Pb in it.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 11/29/89 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME D. Erlich TELEPHONE NO. 516/349-7575

TO Don Piccio OF Sofin International Ltd  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Supply equipment for lead smelters  
suggest to call Interstate Lead Co, Leeds, AL  
800/544-9745 Roy Brui*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.



# Canonie

## TELEPHONE CALL RECORD

43

DATE 10-26-84 TIME 9:05 PROJECT NO. 88-099-07  
NAME NL TELEPHONE NO. 913/621-4100

TO Irvin Sackin OF S-G Metals Industries, Inc.  
FROM W. H. K. OF \_\_\_\_\_

Smelter shut down 10 years ago.

Despite this requested sample to be sent to

L. G. Galamba Jr.

S-G Metals Industries, Inc.

P.O. Box 2039

Kansas City, KS 66110

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 7/30/90 TIME 9:50 am PROJECT NO. 88-099-07  
NAME P. Erlich TELEPHONE NO. 913/621-4100

TO L. J. Galamba Jr. OF S-G Metals Industries, Inc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Analysed the sample. It is ~~the~~ of interest to them. Lead fines showed 16% moisture content and 76 percent recovery. Based on today's market they will pay us approx. 13-14¢/lb on delivery. In order to finalize <sup>their decision</sup> they would need 55gal drum sealed to process representative sample). Shipping containers has to be - sealed drums.

# Canonie

## TELEPHONE CALL RECORD

DATE \_\_\_\_\_ TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME WHK TELEPHONE NO. 504/775-3040

TO Glen Hesse OF Schuykill Metals Corp  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Does not want to take 15-40% lead. Have  
capacity problem now. Wants to take 60-80% lead  
constant. Situation can change in next 2 years*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

Sledge contains:

Pb - 25.6 %  
Ba - 2.03 %  
C - 8.79 %  
S - 4.95 %  
Al - 3922 mg/kg  
Antimony - 991 mg/kg  
As - 400 mg/kg  
Cu - 1290 mg/kg  
Se - 40 mg/kg

~ 20% liquid

CANONIE ENVIRONMENTAL SERVICES CORP.  
ENGLEWOOD, COLORADO  
TELECOPY TRANSMITTAL

SENDING PARTY: Algo E&C PROJECT NUMBER: 44-099-07  
RECEIVING PARTY: Sanford A Ester TELECOPY NUMBER: 619/233-1021  
RECEIVING COMPANY: Sanford A Ester & Associates  
733-3730

COMMENTS/INSTRUCTIONS

NUMBER OF PAGES  
INCLUDING COVER:

2

DATE:

11/29/89

SENDING OPERATOR:

C. W. J.

TIME SENT:

1:50

TELECOPY: (303) 799-0186  
ASSISTANCE: (303) 790-1747

Sludge contains:

Pb - 25.6 %  
Bi - 0.03 %  
C - 1.79 %  
S - 4.95 %  
Se - 3920 mg/kg  
Antimony - 991 mg/kg  
As - 400 mg/kg  
Cu - 1290 mg/kg  
Se - 40 mg/kg

~ 20% Liquid

Dear Olga Erlich:

We are much obliged for the above evaluation, thank you again.

We understand you would like to sell the Pb. sludge, right? Therefore we suggest you give aggressive consideration to the following in order for us to be able to realistically evaluate the Sludge.

1. A five LB. sample, which we will process and then evaluate.

We note your general figure of....20% Liquid.

?... % of Liquid

2. If convenient, kindly advise origin of the sludge.

Sincerely,

R.M. [Signature]  
Director  
NSF: sy



**SANFORD A. ESTES & ASSOCIATES**  
INDUSTRIAL CONSULTANTS

FAX COVER SHEET

DATE: DECEMBER 5, 1989

NO. OF PAGES INCL. COVER SHEET: 2

TO : OLGA ERLICH

ATTN.: " CANDID ENVIRONMENTAL SERVICES, ENGLEWOOD, CO

REF.: \_\_\_\_\_

FAX: 363/799-0186

SECO

FAX: 619/233 3730

TELEPHONE: 619/233 8021 JOHN BURNHAM BLDG. SUITE 1605  
SAN DIEGO, CA. 92101

# Canonie

## TELEPHONE CALL RECORD

DATE 12/05/19 TIME \_\_\_\_\_ PROJECT NO. 11-099-07  
NAME D. Erlich TELEPHONE NO. 619/233-1021

TO \_\_\_\_\_ OF \_\_\_\_\_  
FROM Sanford A. Estes OF Sanford A. Estes & Assoc

*Knows batteries business a little. would like to  
have sample of sludge & chromite to look at.*

*5 lbs of sample (each)*

*Send to Sanford A. Estes  
Sanford A. Estes & Associates  
610 W 4th Suite 1605  
San Diego, CA  
92101*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.



# Canonie

## TELEPHONE CALL RECORD

DATE 2/23/90 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME D. Erlich TELEPHONE NO. 305/984-2781

TO James E. Wolfe OF Pacific Chemicals Engineering Co.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Don't think they can do anything now.  
But have a project coming on lead.  
May be in the combination with this project  
will be possible to do something. In order  
to determine this will need about 3-4  
months.

Will send a letter.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE

CANONIE ENVIRONMENTAL SERVICES CORP.  
ENGLEWOOD, COLORADO  
TELECOPY TRANSMITTAL

SENDING PARTY: Olga Erlich PROJECT NUMBER: 88-099-07  
RECEIVING PARTY: James E Wolfe TELECOPY NUMBER: 303/998953  
RECEIVING COMPANY: Pacific Chemicals Engineering Ltd

---

COMMENTS/INSTRUCTIONS

Dear Mr Wolfe,

Attached is a copy of letter we send  
to you on October 27, 1989 together with  
lead sludge sample. Would you be  
so kind and answer it. Our  
FAX # 303/799-0186 please send it to  
my attention. Thank you very much

Sincerely,  
Olga Erlich

---

NUMBER OF PAGES  
INCLUDING COVER:

2

DATE:

01/23/90

SENDING OPERATOR:

MAUREEN

TIME SENT:

TELECOPY: (303) 799-0186  
ASSISTANCE: (303) 790-1747

# Canonie Environmental

October 27, 1989

Canonie Environmental Services Co.  
94 Inverness Terrace East - Suite  
Englewood, Colorado 80112

Phone 303 790-1747  
Fax: 303 799-0186

88-099-05

Dr. James R. Wolfe  
Pacific Chemicals Engineerings, Ltd.  
200 Union Boulevard, Suite 618  
Lakewood, CO 80228

## Request for Expression of Interest

Dear Dr. Wolfe:

Canonie Environmental Services Corp. (Canonie) is planning to recycle lead oxide and sulfate sludge from a battery processing site for a period of four years beginning in 1991. The lead fines will amount to approximately 5,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives in shipping the concentrates from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for materials that have been reclaimed but must be reclaimed further before the materials are completely recovered. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your lead smelting operation. May I ask that you return this letter by November 27, 1989.

Very truly yours,

*W. H. Kube*

Wolfram H. Kube  
Project Scientist

WHK/jb

The sample submitted by Canonie is \_\_\_\_\_  
is not \_\_\_\_\_ of interest to Pacific \_\_\_\_\_  
Chemicals Engineerings, Ltd.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

# Canonie

## TELEPHONE CALL RECORD

52 ~

DATE 10-25-87 TIME 8:40 PROJECT NO. 88-099-07  
NAME NL TELEPHONE NO. 989-2787

TO James Wolfe OF Pacific Chemicals Engineer, Inc.  
FROM W H K OF \_\_\_\_\_

Yes, interested to receive Pb sludge sample.  
Make 1 lb sample available at Hazen. He will pick  
it up. Told him sample contains 27% Pb. Annual  
amount = 5,000 tons, starting in 1991 for period of  
4 years.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

10/26/89 8:45

36 ✓

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07

NAME \_\_\_\_\_ TELEPHONE NO. 202/634-6441

011-507-52-4650

TO G. Lavecchia OF Panama Canal Commission

FROM WHK OF \_\_\_\_\_

Talk to Linda Tower she said I have to talk to  
Jerry Lavecchia. Need to call Republic of Panama  
phone # 011-507-52-4687 or 4650. He is the person to talk

Their working time 7<sup>45</sup><sub>am</sub> - 3<sup>30</sup><sub>pm</sub> lunch from 11<sup>45</sup> - 12<sup>00</sup>  
(one hour ahead of Denver).

G. Lavecchia in Panama says they are no longer accepting  
lead-bearing materials for recycle. They used to process materials  
in Panama. The operation was shut down 10 years ago.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 12/19/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME A. Erlich TELEPHONE NO. 303/225-6394

TO Pam White OF Perless Alloy Inc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Not interested in 18-30% Pb fines.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/19/89 TIME \_\_\_\_\_ PROJECT NO. 89-099-07  
NAME C. Erlich TELEPHONE NO. 901/775-3770

TO Mr Green OF Refined Metals Corp  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Will not take 18-40% Pb contaminated sludge.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

CANONIE ENVIRONMENTAL SERVICES CORPORATION  
ENGLEWOOD, COLORADO  
TELECOPY TRANSMITTAL

SENDING PARTY: Olga Elich PROJECT NUMBER: 88-099-07  
RECEIVING PARTY: Richard Roles TELECOPY NUMBER: 407/790-6950  
RECEIVING COMPANY: Resources Alloys & Metals

---

COMMENTS/INSTRUCTIONS

Richard,  
here is material content we talk  
in the morning about.

If you have any additional questions,  
please give me a call 303/790-1747

Thank you.

Olga Elich

---

NUMBER OF PAGES  
INCLUDING COVER: 2 DATE: 11/01/89  
SENDING OPERATOR: \_\_\_\_\_ TIME SENT: \_\_\_\_\_

TELECOPY NUMBER: 303-799-0186

ASSISTANCE: 303-790-1747



Sludge

contains :

30% Pb

20% Liquid

# Canonie

## TELEPHONE CALL RECORD

11/27/89  
DATE 11-27-89 TIME 11:25 PROJECT NO. P9-049-07  
NAME O. Erlich TELEPHONE NO. 407/790-7200  
5306

TO Richard Eoles OF 3<sup>rd</sup> House of Alloys & Metals  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Referred by United American Metals Mr Remott  
11/25/89 6:00 message  
11/26/89 11:00 message

11/27/89 FAX # 407/790-6950

11/28/89 Too low grade. Cannot economically process it  
Increased in WCC 5.5% Pb content

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 11/30/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-05  
NAME \_\_\_\_\_ TELEPHONE NO. 716/459-2100

TO \_\_\_\_\_ OF \_\_\_\_\_  
FROM Robert Grodin OF River Smelting & Refining Company

will not be able to accept Pb sludge  
They are copper refinery. Can take only  
small amount of Pb material.

Suggest to call Master Metals, Inc. (secondary Pb smelter)  
and talk to Ray Mickey or contact

Comined

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 18-099-07  
NAME O Erlich TELEPHONE NO. 216/459-2100

TO Robert Grodin OF River Smelting & Ref. Company  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Need a sample 5-10 lbs Turn around 2-3 weeks  
Not sure if this material is right for this smelter,  
but would like to take a look.

Attn. Robert Grodin  
River Smelting & Refining Company  
4195 Bradley Road

Cleveland, OH

44109

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/79 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O. Erlich TELEPHONE NO. 901/253-7701

TO Larry Schenck OF Ross Metals, Inc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Need a sample to look at - 10lbs*

*Attn. Larry Schenck  
Ross Metals, Inc.  
100 N Rail Road Street  
Knoxville, TN  
38066*

*Turn around approx 10 days*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10-26-59 TIME 1 pm PROJECT NO. 88-094-07  
NAME NL TELEPHONE NO. 315/463-9500

TO Lee Raymond OF Roth Brothers Smelting Corp  
FROM W H K OF \_\_\_\_\_

Lead content of sludge too low.  
Looking for 75% Pb.  
Suggested sending sample with note to

Paul Roth  
Vice President  
Roth Brothers Smelting Corporation  
6223 Thompson Rd.  
~~P.O. Box~~  
East Syracuse NY 13057

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canome

## TELEPHONE CALL RECORD

42

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 35/413-9500

TO Lee Raymond OF Roth Brothers Smelting Corp  
FROM \_\_\_\_\_ OF \_\_\_\_\_

2<sup>52</sup> pm left message

9:05 am 10-26 away from desk, left message.

Lead content too low looking for 75%.

Paul Roth  
V. President

Send sample for

# Canonie

## TELEPHONE CALL RECORD

DATE 08-24/89 TIME \_\_\_\_\_ PROJECT NO. PP-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 214/631-6070

TO Karl Fisher OF RSR Corporation  
FROM WHK OF Canonie

Low grade Pb contaminated material is  
up hill battle. Moisture content is very important.  
15% Pb contaminated sludge will not cover  
conversion cost. May assess charge ~\$50/ton in  
order to take it.

SiO<sub>2</sub>, Bi, Zn, Cu, Ni content make a lot of difference  
in order to accept material.  
Have plant in LA.



# Canonie

## TELEPHONE CALL RECORD

DATE 10/19/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME P. Erlich TELEPHONE NO. 205/566-1563

TO Kenny Campbell OF Sanders Lead Co. Troy AL  
FROM \_\_\_\_\_ OF \_\_\_\_\_

He is on the meeting. Left message with secretary  
Will not be interested in anything containing less  
than 50% Pb.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 08/04/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 205/566-1563

TO Kenny Campbell OF Sanders Lead Co  
FROM WHK OF Canonie

*Need to re sample of lead sludge 5 lbs before  
going any further.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

Chemical analysis of lead fines:  
(percent dry basis)

Aluminium	0.392
Antimony	0.135
Arsenic	0.045
Copper	0.143
Selenium	0.004
Antimony	0.275
Zinc	0.130
Lead	25.850
Bismuth	0.016
Carbon	8.790
Sulfur	5.230
Silver	0.090
SiO <sub>2</sub>	18.200
Iron	17.800
Calc	2.100
Total	79.280

CANONIE ENVIRONMENTAL SERVICES CORP.  
ENGLEWOOD, COLORADO  
TELECOPY TRANSMITTAL

SENDING PARTY: Alga Erlich PROJECT NUMBER: 88-099-07  
RECEIVING PARTY: Stan Rezac TELECOPY NUMBER: 503/284-9627  
RECEIVING COMPANY: Pacific Resource Recycling Inc

COMMENTS/INSTRUCTIONS

Dear Stan,  
Attached are chemical analysis of  
lead lines we talked on the phone  
about.

NUMBER OF PAGES  
INCLUDING COVER: 2 DATE: 01/29/90  
SENDING OPERATOR: Steve Slocum TIME SENT: 1:00 PM

TELECOPY: (303) 799-0186  
ASSISTANCE: (303) 790-1747

# Canonie

## TELEPHONE CALL RECORD

35 ✓

DATE 10-25-89 TIME 9:55 PROJECT NO. \_\_\_\_\_

NAME NL TELEPHONE NO. (408) 682-4030

TO Switch Board Operator OF Pacific Electric - GNB

FROM NHK OF \_\_\_\_\_

*Not coming at this facility. Call (408) 689-1701  
and talk to Frank Barnett, Plant Mgr, or Ken Strunk.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

34 ✓ -

DATE 10-25-89 TIME 7:35 PROJECT NO. 88-099-07  
NAME NL TELEPHONE NO. (1-713-555-4212)  
(718) 389 4900

TO Henry Mayer, Brooklyn, NY OF Ney Smith & Ref. & Comp.  
FROM WTK OF Canonie

Cannot touch our material because of environmental  
concerns (air quality) in Brooklyn.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

2

# Canonie

## TELEPHONE CALL RECORD

DATE 4/29/39 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME O. Erlich TELEPHONE NO. 619/225-0206

TO Mr. Kau OF New Frontier Trailing Corp  
FROM \_\_\_\_\_ OF \_\_\_\_\_

10:25am left message  
4/29/39 not interested in lead sludge

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

335

14:25

DATE 12-25-89 TIME 9:02 PROJECT NO. 88-099-  
NAME NL TELEPHONE NO. (413) 734-6491

TO Larry Antaya OF New England Smelting Works, Inc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

He stepped out for 5 minutes. Called again at 9:15.

Mr. Samly Saffer is person to talk to. Back at 1pm

More involves in two basic alloys. Pb-sludges do not  
fit into their line of business

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE..



# Canonie

## TELEPHONE CALL RECORD

1/20

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME Derlich TELEPHONE NO. 314/776-5600

TO ~~the~~ Jim Bucher OF Midco, Saint Louis  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Will be back on 10/30/89 - out of the office  
Referred by Joe Messner from Chemetco

11/02/89 - Copper smelter material that they would accept  
should have some Cu or Zn value in it. Limited how  
how much material they would take. Can not take  
Pb contaminated sludge.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/19/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O'Elch TELEPHONE NO. 216/621-2361

TO Steve Abrams OF Master Metals, Cleveland  
FROM \_\_\_\_\_ OF \_\_\_\_\_

SA is at lunch Talk to secretary, left a message.  
Call back. He need a sample of 5gal to be  
analyse in their lab 1week turn around.

Attn. Steve Abrams  
Master Metals  
2850 W 3rd Street  
Cleveland OH  
44113

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

31✓

DATE 12-25-89 TIME 9:05 PROJECT NO. 88-099-07  
NAME NL TELEPHONE NO. (402) 721-7540

TO John Macklin, Fremont, NE OF Heamus-Fordy Ind. Inc.  
FROM WHK OF Canonie

This company makes and recycles Lead Bearings for the rail road. They do not believe that lead compounds would fit into their process. Not interested to receive sample.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

30 ✓

DATE 10-25-89 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME NL TELEPHONE NO. 1213 531-9171

TO W.G. Krishnam OF Liberty Metal Company  
FROM WHK OF \_\_\_\_\_

Absolutely not interested in lead bearing fines.  
He will not take battery recycle products.  
His line of business is lead and tin.  
Suggests we talk to Alco Pacific.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/79 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O. Erlich TELEPHONE NO. 713/224-9546

TO Robert Selmonds OF Lead Products, Inc.

FROM \_\_\_\_\_ OF \_\_\_\_\_

*Not a melter. Fabricate lead products  
Not interested in accepting Pb contaminated  
sludge*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE..

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-C99-07  
NAME O. Erlich TELEPHONE NO. 213/834-2570

TO Vince Lazare OF Keel Co.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Have a refiner here, which is actually in Mexico.

- Fumes from the melting of battery parts or sludge are very toxic because of acid presence in battery material
- Cost more to process it than it worth
- The only way they can ship this material across the border because Mexican guy comes and gets it. Other wise it is too expensive, and they are not allowed to ship it without license
- Need a sample 5gal - 50 lbs

Attn. Vince Lazare  
327 E. Bee Street  
Wilmington, CA  
90744

Turn around on results probably 10 days max.  
His FAX # 213/834-3571

# Canonie Environmental

October 27, 1989

Canonie Environmental Services Corp.  
34 Inverness Terrace East - Suite 100  
Englewood, Colorado 80112

Phone 303-790-1747

Fax: 303-799-0166

88-099-05

Mr. Vince Lazore  
Keel Co.  
327 East Bee Street  
Wilmington, CA 90744

## Request for Expression of Interest

Dear Mr. Lazore:

Canonie Environmental Services Corp. (Canonie) is planning to recycle lead oxide and sulfate sludge from a battery processing site for a period of four years beginning in 1991. The lead fines will amount to approximately 5,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives in shipping the concentrates from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for materials that have been reclaimed but must be reclaimed further before the materials are completely recovered. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your lead smelting operation. May I ask that you return this letter by November 27, 1989.

Very truly yours,

*W. H. Kube*

Wolfram H. Kube  
Project Scientist

The sample submitted by Canonie is \_\_\_\_\_  
is not \_\_\_\_\_ of interest to Keel Co. \_\_\_\_\_

\_\_\_\_\_  
Signature

WHK/jb

\_\_\_\_\_  
Date

CANONIE ENVIRONMENTAL SERVICES CORP.  
ENGLEWOOD, COLORADO  
TELECOPY TRANSMITTAL

SENDING PARTY: Olga Elich PROJECT NUMBER: 88-099-07  
RECEIVING PARTY: Ed Huseman TELECOPY NUMBER: 213/834-3571  
RECEIVING COMPANY: Keel Co

COMMENTS/INSTRUCTIONS

Ed,  
this letter I would like to get  
back from you with your response

Thank you,

Olga Elich

11/28/89

NUMBER OF PAGES  
INCLUDING COVER:

2

DATE:

11/28/89

SENDING OPERATOR:

Craig

TIME SENT:

3:50

TELECOPY: (303) 799-0100  
ASSISTANCE: (303) 790-174



# Canonie

## TELEPHONE CALL RECORD

DATE 11-21-89 TIME 3:00 PROJECT NO. 88-099-07  
NAME NL TELEPHONE NO. 206/937-8025  
Ebonite as Fuel

TO Ron Wallace OF IDEAL  
FROM W. Kube OF Canonie

Mr. Wallace on vacation til Monday after Thanksgiving.

12-4-89

Reached Ron Wallace and requested that he writes letter to Canonie confirming interest in using ebonite as cement plant fuel.

Mr. Wallace said he would do this.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 2-15-90 TIME 10:00 PROJECT NO. 88-099-07  
NAME N'L TELEPHONE NO. 206/937-8025

*Ebonite as Fuel*

TO W. H. Kube OF Canonie  
FROM Mike Depew OF Ideal, Seattle

Ron Wallace is out of the office for an extended period of time following surgery. Mike Depew is in charge and called to say:

1. Ideal cement company would not be willing to pay for the ebonite.
2. Another 10-lb. ebonite sample is required for testing.

When asked whether he would confirm IDEAL'S interest in writing, he said he would promptly return the expression of interest questionnaire to me.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE..

# Canonie

## TELEPHONE CALL RECORD

DATE 08/07/59 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 215/378-0540

Ebonite

TO Louis Magditz OF Exide  
FROM WHE OF Canonie

Richardson Battery Parts Div (WITCO) still  
makes ebonite.

Ebonite contains:

- 10% synthetic rubber
- 10% oil
- 5% sulfur ( $S_2$ )
- 10% lime
- 65% coal dust.

Ash after burning contain 10%  $S_2$

Richardson Battery Parts Div (WITCO Corp)

312/626-8900

DATE 11-26-87 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_

NAME \_\_\_\_\_ TELEPHONE NO. 329-1785

*Electric as Fuel*

TO Dave Muagli OF Colorado Public Service

FROM UHK OF \_\_\_\_\_

Could sbomite be burnt as fuel in Power Plant?

Coal burnt in Colo is ground to - 200 mesh. Fineness has impact on burn-out rate. Coal cost in Colo = \$15-30/ton  
40,000 + sbomite = ~ \$800,000 value.

Parvise 500 MW Plant uses 200 tons per hour of coal.

Equal to  $1.75 \times 10^6$  tons per year. 3% sulfur is high  
Would require plant with  $SO_2$  removal equipment.

Most probably going into flyash. Two types of ash generated  
furnace - clinker - bottom ash  
fly ash - fine dust

Literature: Journal of Air Pollution Control

Combustion Engineering: Combustion

Babcock & Wilcox: Steam, Its Generation and Use

# Canonie

## TELEPHONE CALL RECORD

DATE 10/30/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME N/L TELEPHONE NO. 503/224-5747

### Ebonite as Fuel

TO Jim Post OF Ashgrove, Cement Co.  
FROM W H K OF Canonie

Understand that Ashgrove has cement plant in Durky, Ore.  
Would you consider using non-toxic hard rubber (ebonite)  
as a fuel?

Fuel can't have more than 1% S<sub>2</sub> in Oregon. Durky is  
located 300 mi east of Portland, must ship by rail to  
keep costs down. For testing would require 1 gal sample.

Did not send sample because of 300 mi distance to Durky  
versus 170 mi distance to Seattle and Boardman.  
Contact could be pursued if everything else fails.

# Canonie

## TELEPHONE CALL RECORD

DATE 09/27/87 TIME \_\_\_\_\_ PROJECT NO. 89-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 367/721-2380

TO J. Claire Peterson OF Western Research Institute  
FROM C. Erlich OF Canonie

- Have to look at physical properties of ebouite
- Suggest to start with the following tests:
  1. mix asphalt (paving) and ebouite
  2. heat mixture to 250°C
  3. note if ebouite dissolves in asphalt. or not.
- If dissolves can be used as a filler possibly. But not optimistic - asphalt is organic material. Rubber can be used or rubber material (but has to have more rubber %.)
- If not dissolves can be used as a mixture - should have very strong mechanical properties. ~~Can~~ Can not say exactly about this. Recommend talk to John Eppich, University of Nevada, Civil Engineering Dept.
- If something will work the only way to go is to local market. A lot of sneaky salesman in the local market, and a lot of regulations. Doesn't know where to get this regulations.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/31/84 TIME \_\_\_\_\_ PROJECT NO. PP-C99-C7  
NAME \_\_\_\_\_ TELEPHONE NO. 301/752-3500

TO Merry Nelson OF U.S. Track & Tennis Court Bldg., H.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Call (Hon) Ronald Smith 406/245-5202  
for Ligeronno 508/347-5184

10/02/84  
Call Rick Frinkhouse 301/739-3077  
Chairman of tennis division

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/22/84 TIME \_\_\_\_\_ PROJECT NO. 88-0799-C7

NAME \_\_\_\_\_ TELEPHONE NO. 406/245-5202

TO Gen/Ronald Smith OF President of US Track & Tennis  
Coast Ballers Association  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Most of recreational products were reformulated to get rid of asbestos & lead in it. He doesn't know formulations & limits by himself. Suggests to call largest tennis courts manufacturers:

1. California products - 800/225-1141

Art Tucker

2. Wikel Manufacturers - 800/537-6100

Al Harp

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.



# Canonie

## TELEPHONE CALL RECORD

DATE 11/02/89 TIME \_\_\_\_\_ PROJECT NO. SP-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 201/739-2077

TO Rich Frankhouse OF US Track & Tennis Court Bldg.  
Assoc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*left a message*

*11/02/89 going to the meeting with US Track & TC Bldg. will talk  
with them about it May be will be able to  
help - answer in a week or so*

*I should call him back 11/04/89*

*11/10/90 Doesn't know about any regulations*

# Canonie

## TELEPHONE CALL RECORD

DATE 6/12/90 TIME \_\_\_\_\_ PROJECT NO. 88 C99-07

NAME \_\_\_\_\_ TELEPHONE NO. 303/331-4830

TO O. Erlich OF Canonie  
FROM Roger Schimmel OF State Dept. of Health

Do not see any limitations for abatement using  
residential asphalt, as long as it meets EPA  
criteria

Send a copy of letter to him

FAX # 313/322-9076

asking about written response

# Canonie

## TELEPHONE CALL RECORD

DATE 11/03/89 TIME \_\_\_\_\_ PROJECT NO. 89-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 303/331-4130

TO Roger Schimmel OF State Health Dept. (Hwy. Materials  
FROM \_\_\_\_\_ OF & Waste Management Division)

*Do not see any limitations for the concrete use in  
recreational asphalt  
as long as it meets criteria for EPTx.*

*4210 E 11 Av Room 351  
Denver Co 80220*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 09/26/84 TIME \_\_\_\_\_ PROJECT NO. 88-099-07

NAME \_\_\_\_\_ TELEPHONE NO. 509/484-1758

TO Robert L. Dunning OF Petroleum Service Inc.

FROM O. Erlich OF Canonie

- Thinks that ebonte cannot be used as a direct additive to asphalt.
- Someone tried to solve stripping problem by adding hydrating lime
- Worth to try if cost of ebonte will be not more than a cost of rock on a volume basis.
- Able to run the tests, recommends to start from viscosity (3 tests) and penetration (3 tests) test. Cost in his laboratory - \$240.00
- For this tests need approx 1 quart to 1 gallon of -325 mesh to -200 mesh material
- Turn around one week (max)
- After the results will talk further

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 11/17/84 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 509/484-1758

TO Kent Anderson OF Petroleum Service Inc.  
FROM O. Erlich OF Canonie

- There are two different mix designs.
  - ① cold mix - slurry seal treatment emulsion blend
  - ② hot mix - asphalt cement
- Suggest to test above by stripping test ASTM E-3625 (quick, field test)  
To run this test will need 2 lbs of material and asphalt A-4000 or AC-10 (1 quart)  
Cost \$30.00 Turn around 1-2 days.
- Colo. Dept. of transportation (every state have its own) can supply us with complete test method to evaluate hot mix (this is design procedure.)
- After this test (above) will go further depending on results.
- Each state have its own A-4000 or AC-10 asphalt.
- Robert Fanning is person to talk about cold mix design

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE \_\_\_\_\_ TIME \_\_\_\_\_ PROJECT NO. 88-049-07  
NAME C. E. Eick TELEPHONE NO. 323/457-4833

TO Jerry Tammgren OF Park & Recreation City of Denver  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Use approx 15,000 t/year of asphalt in walking  
tracks in Denver

Usually order asphalt from City Placit (284-647).

In M. C. High specimens used hot mix:  
gravel, sand, fly ash addition, heat to 430° and  
mix & then add rubber by hand - C-6 mix

# Canonie

## TELEPHONE CALL RECORD

DATE 1-25-87 TIME 15:05 PROJECT NO. 98-094-07  
NAME NL TELEPHONE NO. 503/588-2430  
Ebonite 25 Aggregate in Concrete

TO Dick Angstrom, Director OF Oregon Concrete and Aggregate Association  
FROM WHK OF Canonie

The annual consumption of aggregate in 3 counties of the Portland area amounts to 15-20 million tons per year. The consumption increased 40% over a period of ten years. The three counties are:

Multnomah, Washington and Clackamas.

This message was relayed by Rebecca, Mr. Angstrom's secretary.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/21/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 301/779-4880

TO Emy Hummel OF Port-C Highway Pavement Area  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Asphalt pavement can be recycled If you  
put any additive to asphalt it is not recyclable  
Call U.S. Truck & Tennis Court Builders Association  
may be they can help*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE..



# Canonie

## TELEPHONE CALL RECORD

DATE 11/28/89 TIME \_\_\_\_\_ PROJECT NO. 88-094-07  
NAME \_\_\_\_\_ TELEPHONE NO. 303/757-9724

TO Dick Hines OF Highway Dept. of Colo  
FROM D. Erlich OF Canonie

- Going to send test method to evaluate hot mix design
- By doing resistance test they looking for durability increase. Mix should contain 5, 5.5, 6.0, 6.5% (or similar values, this is an example only) asphalt. If this is not working, aggregate not durable and in this case they adding liquid-ion strip or hydrated lime to the asphalt to make it more durable.
- Every state will use Lettman test as evaluation for hot mix design.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 11/13/89 TIME \_\_\_\_\_ PROJECT NO. PA-049-07  
NAME \_\_\_\_\_ TELEPHONE NO. 303/757-4602

TO Rick Delacastro OF Colo Asphalt Producers Assoc  
FROM \_\_\_\_\_ OF \_\_\_\_\_

- Rubber as additive to asphalt gives better quality, but they have smoking problem all the time.

Best way to go will be to find air quality limitations.

- EPA have sections on "operation hot plant emission standard for asphalt."
- They heat their mix to 51° F and it starts to smell. Temperature to make asphalt 310° F

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE \_\_\_\_\_ TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O. Erlich TELEPHONE NO. 303/458-4812

TO Rod Wiberg OF City of Denver Park & Recreation  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Rod Wiberg - suggests to call Neil Sperandio. Doesn't know about any specifications on Recreational Asphalt. Concrete tennis courts has been used to his knowledge. Asphalt from the asphalt plant has been used for the walking trails.

Jersey Temmyson - 303/458-4833 Have standard for rubber additive asphalt used it a long time ago for Mile High Stadium (tire shredding add to asphalt)

John Delave - specialist on tennis courts. Uses 4" compacted asphalt mainly from crushed gravel, on the top goes asphalt and then special coating. Have not been use this for a while, because usually put concrete tennis courts.

Neil Sperandio - suggest to give him specifications for ebomite and he will put it in circulation for Health Dept with written response.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE

# Canonie

## TELEPHONE CALL RECORD

DATE Sept, 1989 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME DL TELEPHONE NO. (602) 829-0448

*Ebonite in Asphalt*

TO Bob Campbell OF Asphalt Institute, Tempe, AZ  
201 E Southern Ave, Suite 104  
FROM W.H. Kube OF Canonie

Q: Can ebonite be used in asphalt?

A: Has never been done to his knowledge.

To determine feasibility, must do experimental work.

Q: What kinds of tests should be done?

A: The asphalt temperature is 275-325°F and anywhere from 250-325°F when aggregate is added.

Most basic test would involve heating of ebonite to 300°F and to see what happens. If material is stable, it may be used as an aggregate.

Suggests we get in touch with Bud Brakey of Asphalt Institute in Jvr to determine who can do tests for us locally.

# Canonie

## TELEPHONE CALL RECORD

DATE 9/18/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 303/753-1014

TO Bud Brakey OF Asphalt Institute  
FROM O. Erlich OF Canonie

Suggest two types of tests:

① "neet" asphalt - cement (used in paving)  
powder ebomite should be used.  
courtesy should be checked & compared to  
"neet" asphalt.

recover asphalt after the test and see the  
differences (if any additive is remain in asphalt).

② additive (ebomite) in different quantities  
- mix design compare to "neet" asphalt (may be 3 mix)  
- do evaluation of mixes (compressive strength & so on)

Call:  
- Western Research, Institute (WV, Lacimice)  
J. Clain Peterson 307/721-2300  
- Robert L. Dunning, Petroleum Science Inc.  
509/489-1758

# Canonie

## TELEPHONE CALL RECORD

DATE 10/20/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 602/829-0448

TO Bob Campbell OF Asphalt Institute  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Has publication Asphalt pavement for  
athletic & recreational uses - IS-147  
Can pick it up in Denver office

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE \_\_\_\_\_ TIME \_\_\_\_\_ PROJECT NO. PP-099-07  
NAME D. Erlich TELEPHONE NO. \_\_\_\_\_

TO Bud Brally OF Asphalt Institute (Denver)  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Suggests to call State Architects Assoc. (Landscaping)  
Calls asphalt for tennis court-recreational  
asphalt

Call manufacture of asphalt emulsion  
Cabiter 296-8575 may be they can help

Call Nat'l Asphalt Pavement Assoc  
301/779-4880

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 09/27/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 312/626-8900

TO Mike Tiepak OF WITCO Corp. Richardson Battery Parts Division  
FROM O. Erlich OF Canonie

- Do not produce ebonite any more. Produce "hard rubber", but it has different composition than ebonite. Ebonite had ~25%  $S_2$  (sulfur). Material which they produce has 2% sulfur ( $S_2$ ).
  - Product they produce called "mineral fill". They tried to find market for recycling but nobody wants it. Only way he sees it to burn it, but nobody wants it because of  $S_2$  content. Possibly, if get rid of  $S_2$  somehow then it can be used as a fuel.
- Never looked at an addition to asphalt.  
Will send MSDS sheet for the "mineral fill".



# Canonie

## TELEPHONE CALL RECORD

DATE 10/19/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME NL TELEPHONE NO. 714/843-5798  
Ebonite uses, General

TO David La Point OF Vercor, Hermosa Beach, CA  
FROM O.E OF Canonie

*Have been successful molding 2" diameter rods from ebonite. Because of residual lead content must come up with some market where lead will not be a problem.*

*Did not find a market for the product.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 08/07/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 504/775-3040

TO Glen Hare OF Shuykill Metals Corp  
FROM WHK OF Canonie

*Elonite is insoluble*

*Contains silicate,  $CaO$ ,  $S_2$*

*Has 12,000 BTU/lbs can be burnt.*

*May be can use in asphalt*

*Cannot cast it, can be used as plastic parts filler.*

*Another option to bury it.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/13/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 213/318-2554

### Possible uses of ebomite

TO Albert La Point OF Arca Engineering  
FROM O.E. OF Canonie

But several things to recycle rubber. The cheapest solution is to throw it away.

Tried to grind ebomite and combined it with polypropylene chips to make molds of thick wall pipe, pellets, fence posts. Holding tests were done by Verrecorp of Hermosa Beach, CA (owned by Arca Engineering).

Contact: David La Point 714/843-5798

Tried to burn it but amount of ash is high.

Contact: Peter Carter, Wisdom Corp. 514/340-1706

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

EBONITE

# Canonie

## TELEPHONE CALL RECORD

51 ✓

DATE 10/26/89 TIME 11:35 PROJECT NO. 58-099-07

NAME NL TELEPHONE NO. 800/438-5052

TO Stan Tallman OF Willard Lead Products Company

FROM WHK OF \_\_\_\_\_

*Got out of smelting business 6 years ago.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 11/29/89 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME P. Erlich TELEPHONE NO. 313/491-4780

TO Mr. <sup>Dick</sup> Walker OF Walker Industries  
FROM \_\_\_\_\_ OF \_\_\_\_\_

10:30 left a message

Gave him analyses on sludge. He doesn't think it is possible to process it. Have access to some overseas companies will contact them and get back with us.

12/30

Call back. He called some companies overseas & in U.S. Found companies in far east of US & in Europe who would be interested to look at this sludge. It is not economical to process this material today. Today's value on lead is 10-12¢. unless Pb price will go to 60¢.

Send sample to Mr. Walker

Walker Industries  
14300 Ilene St. Detroit Michigan  
48238

# Canonie

## TELEPHONE CALL RECORD

DATE 01/23/ TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME Alga Slick TELEPHONE NO. 313/491-4700

TO Rick Walker OF Walker Industries  
FROM \_\_\_\_\_ OF \_\_\_\_\_

~~Did not~~ have not done on this sample  
anything yet. Going to call this week  
overseas and see if they interested or not  
Will call back at the end of this week.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

Canonie

FINES

TELEPHONE  
CALL  
RECORD

DATE 01/30/90 TIME 10:15am PROJECT NO. 18-099-07  
NAME D. Erlich TELEPHONE NO. 313/491-4700

TO Dick Walker OF Walker Industries  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Tried to find a place for lead fines. Called one place - they don't want a sample, feel that the cost of bringing this material over will be tremendous. He will try to contact with somebody else but don't think it will be of any interest to them.



# Canonie

## TELEPHONE CALL RECORD

10/22/89  
10/26/89

59

DATE 10/25/89 TIME 10-11-39 PROJECT NO. 88-099-07

NAME O. Erlich TELEPHONE NO. 216/271-1480  
C. D.

TO M. P. S. A. C. OF Victory White Metal Company

FROM \_\_\_\_\_ OF \_\_\_\_\_

Left a message

In machine call.

Same for the day 11:30 am.

Person in the room to be contacted judge  
Should have to clean it.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 7/11/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 202/634-1083

TO Bill Woodbury OF U.S. Bureau of Mines  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Reference EPA Survey of Battery Chip Recycling  
Commercial vendors, Attachment A  
Will send list of secondary lead smelters  
Received on 07/11/89

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O. Erlich TELEPHONE NO. 312/733-6700

TO William F. Ruzotti OF United American Metals  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Generate dress Not interested in recycling products.  
Quantity is too large for their facility  
Call Three Sources Alloys & Metals in FL  
Richard Roles 407/790-7200

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

TO:

Olga Czech  
Continental

FROM:

Carla C. C.  
Rolla Research Center, FTS 277-0981

No. of pages to follow:

One

# Canonie

## TELEPHONE CALL RECORD

DATE 10/07/89 TIME \_\_\_\_\_ PROJECT NO. 89-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. \_\_\_\_\_

TO E. Cole OF US Bureau of Mines  
FROM \_\_\_\_\_ OF \_\_\_\_\_

some of the listed companies are not  
lead smelters (Comtco is copper smelter)  
The list he has from the report with map  
of the locations for lead smelters (no names)  
approx. two years old. Going to FAX this map.  
He knows only several secondary lead smelters  
RSR in TN, AL and Shuglkill  
Heard that there are only 17 secondary lead  
smelters. He does not know exactly their  
names. If he will get their names he is going  
to send a list to us.

Primary lead smelters: ASARCO  
Glover, Missouri  
East Helena, Montana  
Omaha, Nebraska  
El Paso, TX.  
Doe-Ron Co Brink, Missouri

# Canonie

## TELEPHONE CALL RECORD

DATE 11/29/89 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME O. Erlich TELEPHONE NO. 303/792-5001

TO \_\_\_\_\_ OF Tollfree International Ltd  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Design equipment for refineries & smelters.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME O. Erlich TELEPHONE NO. 512/623-3131

TO Steve Rubinski OF Standard Industries

FROM \_\_\_\_\_ OF \_\_\_\_\_

*Not interested in the Pb contaminated material  
if it's less than 50% Pb in it.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 11/29/89 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME D. Erlich TELEPHONE NO. 516/349-7575

TO Ron Puccio OF Sorbus International Ltd  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Supply equipment for lead smelters  
suggest to call Interstate Lead Co, Leeds, AL  
800/544-9745 Roy Brui



# Canonie

## TELEPHONE CALL RECORD

43✓

DATE 10-26-89 TIME 9:05 PROJECT NO. 88-099-07  
NAME NL TELEPHONE NO. 913/621-4100

TO Irvin Sackin OF S-G Metals Industries, Inc.  
FROM W.H.K. OF \_\_\_\_\_

Smelter shut down 10 years ago.

Despite this requested sample to be sent to

L. G. Galamba Jr.

S-G Metals Industries, Inc.

P.O. Box 2039

Kansas City, KS 66110

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 2/30/90 TIME 9:50 am PROJECT NO. 88-099-07  
NAME P. Erlich TELEPHONE NO. 913/621-4100

TO L. J. Galamba Jr. OF S-G Metals Industries, Inc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Analysed the sample. It is ~~the~~ of interest to them. Lead fines showed 16% moisture content and 76 percent recovery. Based on today's market they will pay us approx. 13-14¢/lb on delivery. In order to finalize <sup>their decision</sup> they would need 55gal drum sealed to process representative sample). Shipping containers has to be - sealed drums.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE \_\_\_\_\_ TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME WHR TELEPHONE NO. 504/775-3040

TO Glen Hasse OF Schuylkill Metals Corp  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Does not want to take 15-40% lead. Have  
capacity problem now. Wants to take 60-80% lead  
content. Situation can change in next 2 years*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

Sludge contains:

Pb - 25.6 %  
Ba - 2.03 %  
C - 8.79 %  
S - 4.95 %  
Al - 3920 mg/kg  
Ironing - 991 mg/kg  
As - 400 mg/kg  
Cu - 1290 mg/kg  
Se - 40 mg/kg

~ 20% liquid

CANONIE ENVIRONMENTAL SERVICES CORP.  
ENGLEWOOD, COLORADO  
TELECOPY TRANSMITTAL

SENDING PARTY: Olga ERGL PROJECT NUMBER: 44-599-57

RECEIVING PARTY: Sanford A Ester TELECOPY NUMBER: 619/233-8021

RECEIVING COMPANY: Sanford A Ester & Associates

733-3730

COMMENTS/INSTRUCTIONS

NUMBER OF PAGES  
INCLUDING COVER:

2

DATE: 11/24/89

SENDING OPERATOR:

C. W. J.

TIME SENT: 1:50

TELECOPY: (303) 799-0106  
ASSISTANCE: (303) 790-1747

Sludge contains:

Pb - 25.6 %  
Bi - 0.03 %  
C - 1.79 %  
S - 4.95 %  
Hc - 3920 mg/kg  
Antimony - 991 mg/kg  
As - 400 mg/kg  
Cu - 1290 mg/kg  
Se - 40 mg/kg

~ 20% Liquid

Dear Olga Erlich:

We are much obliged for the above evaluation, thank you again.

We understand you would like to sell the Pb. sludge, right? Therefore we suggest you give aggressive consideration to the following in order for us to be able to realistically evaluate the Sludge.

1. A five LB. sample, which we will process and then evaluate.

We note your general figure of....20% Liquid.

?... % of Liquid

2. If convenient, kindly advise origin of the sludge.

Sincerely,

R.M. Friend  
Director  
RE: fy



SINCE 1917

**SANFORD A. ESTES & ASSOCIATES**  
INDUSTRIAL CONSULTANTS

FAX COVER SHEET

DATE: DECEMBER 5, 1989

NO. OF PAGES INCL. COVER SHEET: 2

TO : OLGA BRUCE

ATTN: " CONDEENVIRONMENTAL SERVICES, ENGLEWOOD, CO

REF.: \_\_\_\_\_

FAX: 363/799 0186

SECO

FAX: 619/233 3730

TELEPHONE: 619/233 8021 JOHN BURNHAM BLDG. SUITE 1605,  
SAN DIEGO, CA. 92101

# Canonie

## TELEPHONE CALL RECORD

DATE 12/05/19 TIME \_\_\_\_\_ PROJECT NO. 11-099-07  
NAME D. Erlich TELEPHONE NO. 619/233-1021

TO \_\_\_\_\_ OF \_\_\_\_\_  
FROM Sanford A. Estes OF Sanford A. Estes & Assoc

Knows batteries business a little. Would like to  
have sample of sludge & chromite to look at.

5 lbs of sample (each)

Send to Sanford A. Estes  
Sanford A. Estes & Associates  
610 W 4th Suite 1605  
San Diego, CA  
92101

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.



# Canonie

## TELEPHONE CALL RECORD

DATE 2/23/90 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME D. Erlich TELEPHONE NO. 305/984-2781

TO James E. Wolfe OF Pacific Chemicals Engineering Co.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Don't think they can do anything now.  
But have a project coming on lead.  
May be in the combination with this project  
will be possible to do something. In order  
to determine this will need about 3-4  
months.

Will send a letter.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE \_\_\_\_\_

CANONIE ENVIRONMENTAL SERVICES CORP.  
ENGLEWOOD, COLORADO  
TELECOPY TRANSMITTAL

SENDING PARTY: Olga Erlich PROJECT NUMBER: 88-099-07  
RECEIVING PARTY: James E Wolfe TELECOPY NUMBER: 303/988953  
RECEIVING COMPANY: Pacific Chemicals Engineering Ltd

COMMENTS/INSTRUCTIONS

Dear Mr Wolfe,

Attached is a copy of letter we send  
to you on October 27, 1989 together with  
lead sludge sample would you be  
so kind and answer it. Our  
FAX # 303/799-0186 please send it to  
my attention. Thank you very much

Sincerely,  
Olga Erlich

NUMBER OF PAGES  
INCLUDING COVER:

2

DATE:

01/23/90

SENDING OPERATOR:

MAUREEN

TIME SENT:

TELECOPY: (303) 799-0186  
ASSISTANCE: (303) 790-1747

# Canonie Environmental

Canonie Environmental Services Corp.  
94 Inverness Terrace East - Suite  
Englewood, Colorado 80112

Phone 303 790-1747  
Fax: 303 799-0166  
88-099-05

October 27, 1989

Dr. James R. Wolfe  
Pacific Chemicals Engineerings, Ltd.  
200 Union Boulevard, Suite 618  
Lakewood, CO 80228

## Request for Expression of Interest

Dear Dr. Wolfe:

Canonie Environmental Services Corp. (Canonie) is planning to recycle lead oxide and sulfate sludge from a battery processing site for a period of four years beginning in 1991. The lead fines will amount to approximately 5,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives in shipping the concentrates from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for materials that have been reclaimed but must be reclaimed further before the materials are completely recovered. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your lead smelting operation. May I ask that you return this letter by November 27, 1989.

Very truly yours,

*W. H. Kube*

Wolfram H. Kube  
Project Scientist

WHK/jb

The sample submitted by Canonie is \_\_\_\_\_  
is not \_\_\_\_\_ of interest to Pacific \_\_\_\_\_  
Chemicals Engineerings, Ltd.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

# Canonie

## TELEPHONE CALL RECORD

52 -

DATE 12-25-79 TIME 8:40 PROJECT NO. 58-099-07  
NAME NL TELEPHONE NO. 989-2787

TO James Wolfe OF Pacific Chemicals Engineering Lt  
FROM W H K OF \_\_\_\_\_

Yes, interested to receive Pb sludge sample.  
Make 1 lb sample available at Hazen. He will pick  
it up. Told him sample contains 27% Pb. Annual  
amount = 5,000 tons, starting in 1991 for period of  
4 years.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

10/26/89 8:45

36 ✓

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 202/634-6441  
011-507-52-4650

TO G. Lavecchia OF Panama Canal Commission  
FROM WHK OF \_\_\_\_\_

Talk to Linda Tower she said I have to talk to  
Gerry Lavecchia. Need to call Republic of Panama  
phone # 011-507-52-4687 or 4650. He is the person to talk

There working time 7<sup>45</sup><sub>am</sub> - 3<sup>30</sup><sub>pm</sub> lunch from 11<sup>45</sup> - 12<sup>20</sup>  
(one hour ahead of Denver).

G. Lavecchia in Panama says they are no longer accepting  
lead-bearing materials for recycle. They used to process materials  
in Panama. The operation was shut down 10 years ago.

# Canonie

## TELEPHONE CALL RECORD

DATE 0/9/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O. Erlich TELEPHONE NO. 303/225-6394

TO Pam White OF Perless Alloy Inc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Not interested in 18-30% Pb fines*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/19/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME D. Erlich TELEPHONE NO. 901/775-3770

TO Mr Green OF Refined Metals Corp  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Call not take 18-40% Pb contaminated sludge.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

CANONIE ENVIRONMENTAL SERVICES CORPORATION  
ENGLEWOOD, COLORADO  
TELECOPY TRANSMITTAL

SENDING PARTY: Olga Elich PROJECT NUMBER: 88-099-07  
RECEIVING PARTY: Richard Roles TELECOPY NUMBER: 407/790-6950  
RECEIVING COMPANY: Resources Alloys & Metals

---

COMMENTS/INSTRUCTIONS

Richard,  
here is material content we talk  
in the morning about.

If you have any additional questions,  
please give me a call 303/790-1747

Thank you.

Olga Elich

---

NUMBER OF PAGES INCLUDING COVER: 2 DATE: 11/01/89  
SENDING OPERATOR: \_\_\_\_\_ TIME SENT: \_\_\_\_\_

TELECOPY NUMBER: 303-799-0186

ASSISTANCE: 303-790-1747



Sludge contains :

30% Pb

20% liquid

# Canonie

## TELEPHONE CALL RECORD

11/27/89  
DATE / TIME 11:25 PROJECT NO. P1-049-07  
NAME D. Erlich TELEPHONE NO. 407/790-7200  
F3.6

TO Richard Eder OF 3<sup>rd</sup> Sources of Alloys & Metals  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Referred by United American Metals Mr. Remott.

11/25/89 6:00 message.

11/25/89 Not in office message

11/21/89

FAX # 407/790-6250

11/23/89 Too low grade. Cannot economically process it  
Interested in w/ 5.5% Pb content

# Canonie

## TELEPHONE CALL RECORD

DATE 11/30/84 TIME \_\_\_\_\_ PROJECT NO. 88-099-05  
NAME \_\_\_\_\_ TELEPHONE NO. 316/454-2100

TO \_\_\_\_\_ OF \_\_\_\_\_  
FROM Robert Grodine OF River Smelting & Refining Company

will not be able to accept Pb sludge  
They are copper refinery. Can take only  
small amount of Pb material.

Suggest to call Master Metals, Inc. (secondary Pb smelter)  
and talk to Dag Mickey or contact

Coninco

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 18-099-07  
NAME O. Erlich TELEPHONE NO. 216/459-2100

TO Robert Grodin OF River Smelting & Ref. Company  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Need a sample 5-10 lbs Turn around 2-3 weeks  
Not sure if this material is right for this smelter,  
but would like to take a look.

Attn. Robert Grodin  
River Smelting & Refining Company  
4195 Bradley Road

Cleveland, OH

44109

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O. Erlich TELEPHONE NO. 901/53-7701

TO Larry Schenck OF Ross Metals, Inc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Need a sample to look at - 10lbs*

*Attn. Larry Schenck  
Ross Metals, Inc.  
100 N Rail Road Street  
Knoxville, TN  
38066*

*Turn around approx 10 days*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10-26-59 TIME 1 pm PROJECT NO. 88-099-07  
NAME NL TELEPHONE NO. 315/463-9500

TO Lee Raymond OF Roth Brothers Smelting Corp  
FROM W H K OF \_\_\_\_\_

Lead content of sludge too low.  
Looking for 75% Pb.  
Suggested sending sample with note to

Paul Roth  
Vice President  
Roth Brothers Smelting Corporation  
6223 Thompson Rd.  
~~P.O. Box~~  
East Syracuse NY 13057

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

42

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07

NAME \_\_\_\_\_ TELEPHONE NO. 35/463-9500

TO Lee Raymond OF Roth Brothers Smelting Corp.

FROM \_\_\_\_\_ OF \_\_\_\_\_

2:52 pm left message

7:25 am 10-26 away from desk, left message.

Left content too low looking for 75%.

Paul Roth  
V. President

Send sample 160

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 08-24/81 TIME \_\_\_\_\_ PROJECT NO. PR-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 214/631-6070

TO Karl Fisher OF RSR Corporation  
FROM WHK OF Canonie

Low grade Pb contaminated material is  
up hill battle. Moisture content is very important  
15%. Pb contaminated sludge will not cover  
conversion cost. May assess charge ~\$50/ton in  
order to take it.

SiO<sub>2</sub>, Bi, Zn, Cu, Ni content make a lot <sup>of</sup> difference  
in order to accept material  
Have plant in LA.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.



# Canonie

## TELEPHONE CALL RECORD

DATE 10/19/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME D. Erlich TELEPHONE NO. 205/566-1563

TO Lenny Campbell OF Sanders Lead Co. Troy AL  
FROM \_\_\_\_\_ OF \_\_\_\_\_

He is on the meeting. Left message with secretary  
Will not be interested in anything containing less  
than 50% Pb.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 08/04/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 205/566-1563

TO Kenny Campbell OF Sanders Lead Co  
FROM WHK OF Canonie

*Need to re sample of lead sludge 5 lbs before  
going any further.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

Chemical analysis of lead lines:  
(percent dry basis)

Aluminum	0.392
Antimony	0.135
Arsonic	0.045
Copper	0.143
Heliumum	0.004
Antimony	0.275
Zinc	0.130
Lead	25.850
Bismuth	0.016
Carbon	8.790
Sulfur	5.230
Aliver	0.090
As <sub>2</sub>	18.200
Iron	17.890
CaO	2.100
Total	79.280

CANONIE ENVIRONMENTAL SERVICES CORP.  
ENGLEWOOD, COLORADO  
TELECOPY TRANSMITTAL

SENDING PARTY: Olga Erlich PROJECT NUMBER: 88-099-07  
RECEIVING PARTY: Stan Resae TELECOPY NUMBER: 503/284-9627  
RECEIVING COMPANY: Pacific Resource Recycling Inc

COMMENTS/INSTRUCTIONS

Dear Stan,

Attached are chemical analysis of  
lead lines we talked on the phone  
about.

NUMBER OF PAGES  
INCLUDING COVER:

2

DATE:

01/29/90

SENDING OPERATOR:

Sharon Spencer

TIME SENT:

1:00 PM

TELECOPY: (303) 799-0186  
ASSISTANCE: (303) 790-1747

# Canonie

## TELEPHONE CALL RECORD

35<sup>a</sup>✓

DATE 10-25-89 TIME 9:55 PROJECT NO. \_\_\_\_\_  
NAME NL TELEPHONE NO. (408) 682-4030

TO Switch Board Jonesboro OF Pacific Chlorine - GN3  
FROM NHK OF \_\_\_\_\_

*Not coming at this facility. Call (408) 689-1701  
and talk to Frank Barnett, Plant Mgr, or Ken Strunk.*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

34✓

DATE 10-25-89 TIME 7:35 PROJECT NO. 88-099-07  
NAME NL TELEPHONE NO. (1-718-555-1212)  
(718) 389 4900

TO Henry Mayer, Brooklyn, NY OF Ney Smith & Ref. & Comp.  
FROM WIK OF Canonie

Cannot touch our material because of environmental  
concerns (air quality) in Brooklyn.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

2

# Canonie

## TELEPHONE CALL RECORD

DATE 4/27/27 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME O. Erlich TELEPHONE NO. 619/225-0206

TO Mr. Kan OF New Frontier Trailing Corp  
FROM \_\_\_\_\_ OF \_\_\_\_\_

10:25am left message  
4/27/27 not interested in lead sludge

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

33 ✓

14:25  
DATE 12-25-89 TIME 9:02 PROJECT NO. 88-099-  
NAME NL TELEPHONE NO. (413) 734-6491

TO Long Antaya OF New England Smelting Works, Inc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

He stepped out for 5 minutes. Called again at 9:15.  
Mr. Sammy Saffer is person to talk to. Back at 1 pm  
More involves in tin base alloys. Pb-sludges do not  
fit into their line of business

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE..



# Canonie

## TELEPHONE CALL RECORD

Vac

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME Derlich TELEPHONE NO. 314/776-5600

TO ~~Derlich~~ from Bucher OF Midco, Saint Louis  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Will be back on 10/30/89 - out of the office  
Referred by Joe Morrison from Chemtec

11/02/89 - Copper smelter material that they would accept  
should have some Cu or Zn value in it. Limited now  
how much material they would take. Can not take  
Pb contaminated sludge.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/19/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O'Erlich TELEPHONE NO. 216/621-2361

TO Steve Abrams OF Master Metals, Cleveland  
FROM \_\_\_\_\_ OF \_\_\_\_\_

SA is at lunch Talk to secretary, left a message  
Call back. He need a sample of 5gal to be  
analyse in their lab 1week turn around.

Attn. Steve Abrams  
Master Metals  
2850 W 3rd Street  
Cleveland OH  
44113

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

31✓

DATE 12-25-89 TIME 9:05 PROJECT NO. 88-099-07  
NAME NL TELEPHONE NO. (402) 721-9540

TO John Macklin, Fremont, NE OF Maxum-Ford Ind. Inc.  
FROM WHK OF Canonie

This company makes and recycles Lead Bearings for the rail road. They do not believe that lead compounds would fit into their process. Not interested to receive sample.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

30 ✓

DATE 10-25-89 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME NL TELEPHONE NO. (213) 531-9171

TO W.G. Krishnam OF Liberty Metal Company  
FROM WHK OF \_\_\_\_\_

Absolutely not interested in lead bearing fines.  
He will not take battery recycle products.  
His line of business is lead and tin.  
Suggests we talk to Alcoa Pacific.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O. Erlich TELEPHONE NO. 713/224-9546

TO Robert Selmonds OF Lead Products, Inc.

FROM \_\_\_\_\_ OF \_\_\_\_\_

*Not a melter Fabricate lead products  
Not interested in accepting Pb contaminated  
sludge*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-C99-C7  
NAME O'Brien TELEPHONE NO. 213/834-2570

TO Vince Lazare OF Keeler Co.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Have a refiner here, which is actually in Mexico.

- Fumes from the melting of battery parts or sludge are very toxic because of acid presence in battery material
- Cost more to process it than it worth
- The only way they can ship this material across the border because Mexican guy comes and gets it. Other wise it is too expensive, and they are not allowed to ship it without license
- Need a sample bag - 50 lbs

Attn. Vince Lazare  
327 E. Bee Street  
Wilmington, CA  
90744

Turn around on results probably 10 days max.  
His FAX # 213/834-3571

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie Environmental

October 27, 1989

Canonie Environmental Services Corp.  
34 Inverness Terrace East - Suite 101  
Englewood, Colorado 80112  
Phone 303-790-1747  
Fax 303-799-0188  
88-099-05

Mr. Vince Lazore  
Keel Co.  
327 East Bee Street  
Wilmington, CA 90744

## Request for Expression of Interest

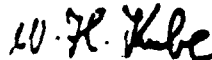
Dear Mr. Lazore:

Canonie Environmental Services Corp. (Canonie) is planning to recycle lead oxide and sulfate sludge from a battery processing site for a period of four years beginning in 1991. The lead fines will amount to approximately 5,000 tons in each of the four years. A representative sample of this material is being shipped to you by Olga Erlich of our Englewood, Colorado office.

Please be advised that we have reviewed the need for a hazardous waste manifest with Environmental Protection Agency (EPA) representatives in shipping the concentrates from the site to a recycling facility. The Resource Conservation and Recovery Act regulations allow the EPA Regional Administrator to grant a variance from classification as a solid waste for materials that have been reclaimed but must be reclaimed further before the materials are completely recovered. Such a variance excludes the need for a hazardous waste manifest for transporting recyclable materials.

At this time, Canonie is interested in determining whether this material can be recycled. After you have had a chance to examine the sample and review the results of your laboratory evaluation, I request that you return a copy of this letter with your conclusion. A positive response will not be regarded as a binding obligation but merely as an indication that the material could be used in your lead smelting operation. May I ask that you return this letter by November 27, 1989.

Very truly yours,



Wolfram H. Kube  
Project Scientist

WHK/jb

The sample submitted by Canonie is \_\_\_\_\_  
is not \_\_\_\_\_ of interest to Keel Co.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

CANONIE ENVIRONMENTAL SERVICES CORP.  
ENGLEWOOD, COLORADO  
TELECOPY TRANSMITTAL

SENDING PARTY: Olga Erlich PROJECT NUMBER: 88-099.07  
RECEIVING PARTY: Ed Huseman TELECOPY NUMBER: 213/834-3571  
RECEIVING COMPANY: Keel Co

COMMENTS/INSTRUCTIONS

Ed,  
this letter I would like to get  
back from you with your response

Thank you,

Olga Erlich

11/28/89

NUMBER OF PAGES  
INCLUDING COVER:

2

DATE:

11/28/89

SENDING OPERATOR:

C. W. J.

TIME SENT:

3:50

TELECOPY: (303) 799-0186  
ASSISTANCE: (303) 790-1747



# Canonie

## TELEPHONE CALL RECORD

DATE 8/7/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 205/699-6171

TO Robert Wilson OF Interstate Lead  
FROM WHK OF Canonie

Normal feed stock is battery plates.  
This stuff would be liability to us (lead fines)  
See to evaluate recovery in rotary furnace  
recover lead & slag.  
Basic furnace cost \$150-200,000

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/79 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME D. Erlich TELEPHONE NO. 205/699-6171

TO Robert Wilson OF Interstate Lead Company  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Sludge 30% Pb is too low in lead, not economical  
Cost too much to process. Would be interested  
in 70-75% Pb material

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/11/89 TIME \_\_\_\_\_ PROJECT NO. 89-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 813/586-1408

TO Celwyn E. Hopkins OF Independent Battery Mfg Assoc  
FROM \_\_\_\_\_ OF \_\_\_\_\_

There are 30 to 35 battery manufactures all over the country and world. They published the book "Big Buyers Guide" where they list all manufactures. Cost \$8.00

Only four companies has smelter and recycle batteries: East Penn (Lion Station, PA), GNB, and Exide

All. There will be able to take batteries but than sell it to somebody else  
10/19/89 send letter to his attention about book request.

# Canonie

## TELEPHONE CALL RECORD

11/01/89 /ac  
DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME D. Erlich TELEPHONE NO. 919/777-8600

TO \_\_\_\_\_ OF IMACO  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Talk to secretary Tom Wylam is the only  
person to talk to He is on vacation, will be  
back on 10/31/89

Call 11/01/89 - out of the smelting business

# Canonie

## TELEPHONE CALL RECORD

DATE 11/29/89 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME D. Enbik TELEPHONE NO. 414/375-4490

TO Gene Klahovic OF IBC Corporation  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Ask to send information about sludge by  
FAX. 414/375-4617

They are not a smelters, but they have access  
to smelters. He is planning to pass this info  
to smelters. Company is buying melting equipment  
Not interested in small quantities of material  
etc.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Sludge contents

Pb - 25.6 %  
 Zn - 100 %  
 Cu - 179 %  
 S - 495 %  
 Fe - 342 mg/kg  
 Manganese - 49 mg/kg  
 As - 400 mg/kg  
 Cr - 129 mg/kg  
 Se - 42 mg/kg

~ 20% liquid

CANONIE ENVIRONMENTAL SERVICES CORP.  
ENGLEWOOD, COLORADO  
TELECOPY TRANSMITTAL

SENDING PARTY: Olga Erlich PROJECT NUMBER: 88-099-07  
RECEIVING PARTY: Gene Vlahovic TELECOPY NUMBER: 414/375-4617  
RECEIVING COMPANY: TBC Corporation

---

COMMENTS/INSTRUCTIONS

Dear Gene,

here is material content we talk  
in the morning about.

Please, let me know if you have any  
additional questions. My phone # 303/790-1747  
Looking forward to hear from you soon.

Sincerely,

Olga Erlich

---

NUMBER OF PAGES  
INCLUDING COVER:

2

DATE:

11/29/89

SENDING OPERATOR:

TIME SENT:

TELECOPY: (303) 799-6186  
ASSISTANCE: (303) 790-1747

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O. Erlich TELEPHONE NO. 312/226-6600

TO Pat Boyle OF H. Kramer & Company  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Not buying PB containing material  
Buying Brass, Bronze, copper.*



# Canonie

## TELEPHONE CALL RECORD

DATE \_\_\_\_\_ TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 813/626-0303

TO C OF Gulf Coast Lead Co  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Would be interested if it does not have to be  
manifested Would like to talk to us further*

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/49 TIME 10:30am PROJECT NO. 88-099-C7  
NAME O. Erlich TELEPHONE NO. 813/426-0303

TO Loraine Payne / Kay Rissaw Gulf Coast Lead Company  
FROM \_\_\_\_\_ OF \_\_\_\_\_

0:30 Left a message

0:35 Talk to Kay Rissaw will call back

12:10,- Call back to Kay Rissaw. She said she talk to Loraine Payne - they will not take sludge under any circumstances.

First of all they have a lot of material and furnace running 24 hours a day. Second - sludge is hard to store Third - sludge is hard to run through the furnace. If it would be batteries themselves or batteries plates they might take them, but even then it's a very little chance for them to take it.

# Canonie

## TELEPHONE CALL RECORD

DATE 8/07/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 213/262-1101

TO Marty Groh OF GNB Inc.  
FROM WHK OF Canonie

Do want to do his own analysis on lead  
sludge Desirable moisture content 10-12%.  
Would like to have a sample of 5 gal for the  
melting test.

# Canonie

## TELEPHONE CALL RECORD

DATE 4/29/84 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME C. Erlich TELEPHONE NO. 215/839-3380

TO \_\_\_\_\_ OF Greenberg Engineering  
FROM \_\_\_\_\_ OF \_\_\_\_\_

10/10 - Left message

Not a melter. Manufacture melting equipment  
Suggest to call RSR, Exide

# Canonie

## TELEPHONE CALL RECORD

DATE 10/19/89 TIME \_\_\_\_\_ PROJECT NO. 18-099-07  
NAME O Erlich TELEPHONE NO. 612/454-3310

TO Mark Kutoff OF ~~the~~ Gopher Smelting  
and Refining  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Would like to see sample before go any  
further 1 lb of sample will do.

Ship it to his attention

3385 HWY 49 South Eagan  
MN 55121

**Canonie**

**TELEPHONE  
CALL  
RECORD**

DATE 01/24/90 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME C.E TELEPHONE NO. 612/454-3310

TO Mark Kietoff OF Gopher Smelting & Refining Corp.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Asked to send analytical data on the lead  
lines. FAX # 612/454-7926*

Sludge contains (percent):

Pb	—	86.9%
Cu	—	0.17%
Zn	—	0.13%
Ag	—	0.09%
SiCl <sub>2</sub>	—	15.5%
Fe	—	17.8%
CaO	—	2.1%
As	—	0.05%
Sb	—	0.25%
Bi	—	0.03%
S	—	4.95%
C	—	8.79%
moisture	~	20%

moisture

CANONIE ENVIRONMENTAL SERVICES CORP.  
ENGLEWOOD, COLORADO  
TELECOPY TRANSMITTAL

SENDING PARTY: Olga Erik  
PROJECT NUMBER: 88-C99-07  
RECEIVING PARTY: Mark Kuttiff  
TELECOPY NUMBER: 612/454-7926  
RECEIVING COMPANY:

Alpha Imaging & Imaging Company  
COMMENTS/INSTRUCTIONS

Dear Mr Kuttiff,  
Attached is the analytical results on the material we send to your attention as a sample about 2 months ago.  
As I talk with you on the phone today I would like to know the considerations we need to keep in mind and price estimate in order for you to accept this material  
If you have any questions please call 303/790-1747. Hope to hear from you soon today

Sincerely, Olga Erik

NUMBER OF PAGES: 2  
INCLUDING COVER:  
SENDING OPERATOR: Olga Erik  
TIME SENT: 1355  
DATE: 6/24/90

TELECOPY: (303) 799-0186  
ASSISTANCE: (303) 790-1747



# Canonie

## TELEPHONE CALL RECORD

DATE 3/24/90 TIME 1:45pm PROJECT NO. 88-099-07

NAME O. E. RICH TELEPHONE NO. 612/454-3310

TO \_\_\_\_\_ OF \_\_\_\_\_

FROM Mark Kutoff OF Gopher Smelting & Refining Co., Inc.

Received Pb sludge content, looked at it  
Don't think they can handle this material  
because of Zn content in it. Will send  
a letter confirming this. Should be here in  
couple days.

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 08/04/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 612/681-5307  
213/262-1161

TO Marty Groh OF GNB Inc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

L. A plant would take lead sludge, but will assess  
charge Cd, Th, As content?  
Require complete analysis: <sup>organics</sup>metallics Zn, Te, Bi, Ni, Cd, As  
Likes to clarify what desired moisture content is.

# Canonie

## TELEPHONE CALL RECORD

356 ✓

DATE 10-25-89 TIME 10:05 PROJECT NO. 28-099-  
NAME NL TELEPHONE NO. 404/689-1701

TO Ken Strunk OF GNB Inc. - Pacific Color  
FROM W.H.K OF Canonie

"30% Lead content is not a good concentration".  
However, would be interested to look at sample.

Send to: GNB Inc.  
PO. Box 2165  
Columbus, GA 31902  
Joy Road

Should consider sending material to Frisco, TX  
because of shorter shipping distance from Oregon.

# Canonie

## TELEPHONE CALL RECORD

DATE 8/3 TIME 8 40 PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 415-444-2776

TO Garciano Magtibay OF ~~THE~~ Globe Metals Co  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Only use a very small amount of  
lead - use pure Pb. Suggested 1  
call Federated Fry Metals in Hayward  
California.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/19/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O Erlich TELEPHONE NO. 615/368-7125

TO Mr. Cole OF General Smelting & Refining Company  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Asked to send him 50lbs of material (18-30% Pb,  
for analyses. His attn. following address:

General Smelting & Refining Company  
HW 31A  
College Grove, TN  
37046

Would be interested in a big amount of material.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-C99-C7  
NAME O. Erlich TELEPHONE NO. 617/442-2050

TO George Othry OF General Metals & Smelting Company  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Not interested because it's cost too much to process this sludge will not have any value at the end. Interested in lead solid pieces only*

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME D. Erlich TELEPHONE NO. 513/641-0566  
513/731-5133

TO Mr. Schneider OF The G. A. Arvill Company  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Produce lead product. Manufacture alloys.  
Interested in metal lead*

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE

# Canonie

## TELEPHONE CALL RECORD

DATE 10/2/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O. Enlich TELEPHONE NO. 216/232-8700

TO Rick Kohn OF Federal Metal Company  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*buying brass & zinc scrap. Not interested in Pb, bridge mater*



# Canonie

## TELEPHONE CALL RECORD

DATE 10/24/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07

NAME D. Erlich TELEPHONE NO. 800/289-3747

TO Dave Comar OF Federated-Fry Metals

FROM \_\_\_\_\_ OF \_\_\_\_\_

30% Pb contaminated sludge - too low in Pb  
for them Not interested. Sludge will make  
too much. Would like to have 80% and  
above lead in dry material. Cost too much  
to process such low quantity of lead. Market  
has enough high concentrated lead material.

# Canonie

## TELEPHONE CALL RECORD

DATE 08/07/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 215/378-0540

TO Louis Magditz OF Exide  
FROM WHK OF Canonie

Have three plants: PA, Indiana, Dallas  
Lead fines have to be containerized in drums  
Nothing in mind that would be detrimental.  
SiO<sub>2</sub> & Al content are very important  
Lead fines have minimal salvage value which  
will probably cover freight

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME 9:50am PROJECT NO. 88-C99-07  
NAME C Erlich TELEPHONE NO. 215/378-0540

TO Lou Magdits OF Exide  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Left a message*

*1:25 left a message*

*3:00pm call back*

*Need a sample of sludge - 5 lbs  
Turn around less than 1 week*

*Attn: Lou Magdits  
Exide Corp  
645 Penn Reading PA  
19612*

# Canonie

## TELEPHONE CALL RECORD

DATE 12/20/89 TIME \_\_\_\_\_ PROJECT NO. PH-099-07  
NAME Olga Erlich TELEPHONE NO. \_\_\_\_\_

TO \_\_\_\_\_ OF \_\_\_\_\_  
FROM Lou Magditz OF Exide

Lead fines can be processed through their furnace. For more detail pricing information will need to process 10-15 drums through the furnace. Should write letter with this information.

# Canonie

## TELEPHONE CALL RECORD

DATE 01/25/90 TIME 3:15pm PROJECT NO. 88-099-07  
NAME Olga Erlich TELEPHONE NO. \_\_\_\_\_

TO \_\_\_\_\_ OF \_\_\_\_\_  
FROM Estes A. Sanford OF Estes A. Sanford & Assoc

For the material containing 15-20 percent lead they charge \$200/ton.

Didn't have enough time to evaluate lead sludge.

Pure lead on today's market cost 36-39¢  
Market is not favorable for selling lead.

If he will be interested in the material he will need one truck load of representative material

Can not determine how long it will take to evaluate this product.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/24/89 TIME \_\_\_\_\_ PROJECT NO. PA-099-07  
NAME C. Erlich TELEPHONE NO. 215/692-6361

TO Richard Leiby OF East Penn Manufacturing Corp.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Can not take material containing more than  
10% free liquid Need to know what other  
heavy metals are present before we go  
any further.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/64 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O. Erlich TELEPHONE NO. 201/688-9010

TO Steve Turkes/Phil Amella - Essex Metal Alloy Company Inc.

FROM \_\_\_\_\_ OF \_\_\_\_\_

*is out of the office. Will be back in the afternoon  
Left message*

*Manufacture wires. Buying only remelted lead*

# Canonie

## TELEPHONE CALL RECORD

DATE 12/05/84 TIME \_\_\_\_\_ PROJECT NO. 84-000-07  
NAME O. Erlich TELEPHONE NO. 314/694-0158

TO ~~Mr. Erlich~~ OF C.H. Kemp Manufacturing Co Inc / Permea  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*talk to secretary  
Company is producing air separators  
Not interested in lead Hodge Suggest to call  
12/12/84 and talk to Billy, but thinks they will not  
be interested.*



# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O Erlich TELEPHONE NO. 313/548-3010

TO Martin L. Zeldes OF City Metals Refining Company Inc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Doing custom lead casting or lead alloys  
Not doing any recycling for lead contaminated  
material suggested to call ASARCO, DOE-Penn,  
Timothy - Canada

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/99 TIME \_\_\_\_\_ PROJECT NO. 88-C99-07  
NAME A. Erlich TELEPHONE NO. 312/847-1800  
312/262-5200

TO Mr. Lennon OF Chicago Smelting & Refining Corp.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Not lead smelter  
Buy only brass, bronze and Al.*

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 89-099-07  
NAME O Erlich TELEPHONE NO. 618/254-0190

TO Joe Messner OF CHEMETCO Inc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Will take copper contaminated material  
Cu-smelter. Suggests to call Midco in Saint  
Louis talk to Jim Bucher 314/776-5600

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. PP-090-07  
NAME D. Erlich TELEPHONE NO. 718/342-4960

TO Robert Henning Sr OF Belmont Smelting & Ref Works Inc  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Not interested They don't take sludge should be  
metal itself, producing special alloys*

# Canonie

## TELEPHONE CALL RECORD

DATE 07/13/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 312/644-6610  
202/778-2300

TO Judy King OF Battery Council International  
FROM D. Erlich OF Canonie

*Will send list of Battery recyclers.*

*Received on 07/14/89 - list of secondary lead melters.*

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/84 TIME \_\_\_\_\_ PROJECT NO. HP-099-07  
NAME O. Erlich TELEPHONE NO. 803/796-4720

TO Burney Bugak OF AT&T Nissan Metals Corp  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Pb is very tricky subject. Take it only because of the environmental law. AT&T force them to process it. But it's take a lot of money to process it, involve contamination in the process. Has a lot of Pb contaminated water, and don't want to accept even 1 lb more.

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-C99-07  
NAME Derick TELEPHONE NO. 312/523-3231

TO Mr. Sassett OF Ames Metal Products Corp.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

They are not a smelter  
Lead market now 40¢/lb and it cost 15-20¢/lb  
to process this 30% contaminated material  
Suggests to call RSR in CA; also there is Pb smelter  
in Ugu Oregon but ~~he is~~ he is not sure they  
will take this sludge; also Pb smelter in Mexico

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O. Erlich TELEPHONE NO. 213/321-0437

TO Morris Kirk OF Alco Pacific Inc.  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Is it manifested or not. If not manifested  
they will take it & 20% liquid is too wet  
will charge us 20¢/lbs with our delivery  
Would like to look at sample 1lb

Attn. Morris Kirk

Alco Pacific  
16914 S. Broadway  
Gardena CA  
92048



# Canonie

## TELEPHONE CALL RECORD

DATE 9/24/90 TIME 11:40 PROJECT NO. 88-099-07  
NAME Olga Erlich TELEPHONE NO. 213/321-0437

TO Moore Kirk OF Alco Pacific Inc  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Will charge us in the range of 10¢/lbs not including delivery & in order to accept lead fines.

Lead fines is a raw material to them so it will not require any manifest.

Need one truck load of the material to process through their furnace to make sure they can accept it. Material have to be packed in drums

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O Erlich TELEPHONE NO. 215/735-9678

TO Sidney S Tobin OF Acme Alloys  
FROM \_\_\_\_\_ OF \_\_\_\_\_

7:45 Call in an hour

10:30am Interested in solid lead. Making alloys

# Canonie

## TELEPHONE CALL RECORD

12✓

DATE 7-26-89 TIME 9 20 PROJECT NO. 88-099-07NAME NL TELEPHONE NO. 314/991-7114FAX 314/991-7180TO Larry Stoehr OF DOE-RUNFROM WHK OF \_\_\_\_\_

Primary Lead Smelter. Planning to build Secondary  
Lead smelter for battery recycling by 1992.

Not interested in sample now.

Request a letter now with:

- o Description of material
- o Quantity
- o Timing (Delivery schedule)
- o Bi, As, Se, Cu, Sn, Sb assays
- o No manifesting required. Names and  
phone # of persons who provided this  
information.

Their plans are to send separated casing materials  
to of the envisioned battery breaking facility to  
hazardous waste land fill. Would like to know  
what technology exists to make casings non-toxic.

Dick Amistadi is also person to talk to.

< 8% moisture content required. Materials handling consideration  
Expect we pay freight + \$50-100/ton to get rid of it

NOTE: THIS RECORD IS TO BE RETAINED IN THE FILE.

# Canonie

## TELEPHONE CALL RECORD

DATE 2-16-90 TIME 11:15 PROJECT NO. 88-099-07  
NAME NL TELEPHONE NO. (604) 364-4102

Regarding smelting of Lead Fines

TO Gordon Mattson OF Cominco Ltd  
FROM W.H. Kube OF Canonie

Are analytical results completed and will Cominco take the fines?  
Assay work is incomplete. As, Sb and Al are missing. Have found:

S<sub>2</sub> total = 5%  
Pb = 26%  
SiO<sub>2</sub> = 18%  
Fe = 18%  
Sn = 0.1%

Cl and F are also present  
moisture = 16%.

The moisture content of lead concentrates is normally < 10%.  
Until assay work is completed, can not say whether fines are amenable to smelting process.

Discussion on costs indicates Cominco normally charges \$200/ton for smelting. The client then takes credit for the value of the lead which can be recovered. He believes, gold site fines may require higher smelting charge of \$250/ton. Current Pb price at London Metals Exchange is \$US 0.32/lb. If 500 lbs of lead is recovered per ton of sludge, the disposal cost would be \$40/ton plus freight to Trail, B.C.

# Canonie

## TELEPHONE CALL RECORD

DATE 2/23/90 TIME \_\_\_\_\_ PROJECT NO. 89-099-07  
NAME Elgin Erlich TELEPHONE NO. ~~604/364-4102~~  
604/364-4102

TO Mr Mattson OF Cominco Ltd  
FROM O. Erlich OF \_\_\_\_\_

Submitted a sample to analytical laboratory. Have a big back log in analyt. lab. Thinks that will have results & also an answer in 3 weeks (Feb 16). Their process is very sensitive in positives. Plan to process lead fines through slay generator & need to know what exact analyses of the material are. The data which have been provided to him (analyses from Canonie lab) is not enough to in order to determine this.

CANONIE ENVIRONMENTAL SERVICES CORP.  
ENGLEWOOD, COLORADO  
TELECOPY TRANSMITTAL

SENDING PARTY: Olga Erlich PROJECT NUMBER: 88-099-07  
RECEIVING PARTY: Mr. Mattson TELECOPY NUMBER: 604/364-4371  
RECEIVING COMPANY: Cimence Ltd.

COMMENTS/INSTRUCTIONS

Sludge contains

Pb - 25.6%  
Bi - 0.03%  
C - 8.79%  
S - 4.95%  
Al - 3920 mg/Kg  
Sb - 991 mg/Kg  
As - 400 mg/Kg  
Cu - 1290 mg/Kg  
Se - 40 mg/Kg

~ 20% moisture

NUMBER OF PAGES  
INCLUDING COVER:

# 1

DATE:

11/29/89

SENDING OPERATOR:

Crissy

TIME SENT:

12:11

TELECOPY: (303) 799-0186  
ASSISTANCE: (303) 790-1747

# Canonie

## TELEPHONE CALL RECORD

DATE 11/29/89 TIME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
NAME O. Erlich TELEPHONE NO. 604/364-7102

TO Mr. Mattson OF Cominco Ltd  
FROM O. Erlich OF \_\_\_\_\_

Ask to send FAX 604/364-4371 of sludge  
analyses.

11.30.89 Would like to have sample of Sludge (5/bt)  
moisture content should be less than 10%  
in order to accept material for the process  
Thinks that treatment charge will be  
approx. \$150.00/2000 lbs dry weight.

John Gordon Mattson  
Cominco  
Trail B.C.  
Canada V1R 4L8

# Canonie

## TELEPHONE CALL RECORD

DATE 10/25/88 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME D. Erlich TELEPHONE NO. 604/364-4137

*Pb Fines*

TO C.G. Kuers OF Comucel Ltd  
FROM \_\_\_\_\_ OF \_\_\_\_\_

*Left message 9:30 am*

*9:45 - returned phone call Call John Reed 604/364-4165*

*Left message 9:50 am 604/364-1102 Mr Mattson*

*1:20 pm - at lunch call in an hour*

*2:10 - left a message*

*3:30 - Mr Mattson.*

*Need analyses of the sludge first to look at  
Analyses: C, S, Si, As, Al, Antimony.*

*After the analyses would like to have  
a sample 200g. Do not want a sample  
right now. Lab is very busy, turn around will  
be 1 month.*



# Canonie

## TELEPHONE CALL RECORD

DATE 10/19/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME O. Erlich TELEPHONE NO. 212/510-2268

TO John Likarish OF ASARCO  
FROM \_\_\_\_\_ OF \_\_\_\_\_

Said to send sample of 10 lbs lead fines to  
Attn. Glenn Libers  
P.O. Box 7  
Glover Missouri  
# 63646

He will analyse 1 for another element, and physical  
size <sup>As, antimony</sup>  
After this will be done and accepted (which takes approx  
3-4 weeks) he will call. Another sample (S/L) will need to be  
sent to Salt Lake City to their environmental office  
and charge will be \$250 also for analyses

Note should be included to the shipment:

In conversation with John Likarish.  
Please advise the analyses to one department.

# Canonie

## TELEPHONE CALL RECORD

DATE 08/10/89 TIME \_\_\_\_\_ PROJECT NO. 88-099-07  
NAME \_\_\_\_\_ TELEPHONE NO. 801/262-2459

TO Robert Dobbert OF Asarco  
FROM WHK OF Canonie

Interested in our lead sludge?  
What is the composition?

Al and Mg is not desired. Ca is good.  
-10 mesh size material is very good also.  
Their specification is for  $\frac{3}{8}$ " size material.  
Montana sheller is fully committed, Missouri would  
take it.

He will need material characterization:  
one lb of sludge sample. \$250.00 is sample eval  
fee. Turn around 2 months.

Have been taken as low as 5% Pb  
We would pay freight to Glover, Mo. No revenue  
to us.

LEAD FINES

**TELEPHONE RECORDS**

# CanonieEnvironmental

FEBRUARY 1990

88-099-07

TELEPHONE RECORDS  
FOR  
MARKETING STUDIES REPORT  
NL INDUSTRIES, INC.

Since a decision has not yet been made regarding recovery and recycling at the Gould Site, it is not yet clear which, if any, of the promising recycling options will be implemented.

Since the development of this document was funded by NL Industries, I checked with NL, through Office of Regional Counsel, Region X, and determined that it could be reproduced and distributed. The document is not a published report, and the data contained in it has not been subjected to peer review.

Should you have any questions, please contact me at FTS-340-6633.

ATTACHMENT: a/s

cc: Brad Bradley	- (5HS-11)	w/o attachment
Steven Faryan	- (5HS-11)	w/o attachment
Bob Lance	- (5HS)	w/o attachment
Bill Messenger	- (5HSTUP-7)	w/o attachment
Timothy Prendiville	(MS-5H5-11)	w/o attachment
Larry Schmitt	- (5HS-11)	w/o attachment
Jim Vanderkloot	- (5HS-11)	w/o attachment
Louis Blume	- (5MA-14)	w/ attachment